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FOOD GATHERING TO FOOD PRODUCTION

Introduction

TOM JONES

University of Minnesota

These post-war years have witnessed remarkable changes in our knowledge of (and our thinking about) the origins of agriculture. Many of the older theories regarding the early history of agriculture have been challenged; some have been destroyed. This has sometimes been accomplished by the appearance of acceptable counter-hypotheses, more in accord with known facts, but frequently the application of new research techniques has disclosed evidence so concrete that older ideas have been rendered untenable.

One of the secrets of these recent advances is twofold: it consists of activity and coöperation. In many instances the philosopher-historian at his desk has been left far behind by the archeologist in the field. Moreover, the field-worker not only uncovers evidence, but he also seeks the aid of the paleontologist, the paleobotanist, and the physicist to explain it. Professor Braidwood's work at Jarmo well illustrates the advantages of a happy combination of the physical, natural, and social sciences, which has gone a long way toward filling a definite gap in our knowledge of the past.

Within the last two years a number of books and articles dealing with the beginnings of agriculture have appeared. These publications are indicative of the renewed interest in the subject. Furthermore, although they vary in importance, each one may be examined with profit if only to assess its virtues and its faults. Edward Hyams' rather journalistic *Soil and Civilization*,[1] for example, though unscholarly and seemingly innocent of any awareness of recent research, contains an interesting series of portraits of man as (1) a soil member, living like any other animal or plant in a natural state; then (2) man as a soil parasite at the beginning of his agricultural existence living off his environment instead of with it; and (3) man as a disease of the soil, disrupting the natural order and destroying his own livelihood by overexploitation. The moral of the tale is, of course, that man should strive to attain a fourth, or ideal state, which Hyams calls man as a soil maker, building and improving on the conditions of his environment.

In other words, in studying the origins of agriculture, we encounter man both as a creator and a destroyer. As Carl Sauer has said:

"As artificer of social change, man has become increasingly powerful in modifying the plant and animal world surrounding him. The history of mankind is a long and diverse series of steps by which he has achieved ecological dominance. He has intervened, with and without design, to increase and decrease, to expel or exterminate and to introduce, to modify and even to originate organic entities. Largely he has prospered by disturbing the natural order. Often, however, he overreaches himself and the new order he has introduced may end in disaster."[2]

Sauer's *Agricultural Origins and Dispersals* is a brilliant, challenging book which contributes many ideas of permanent value. Its chief defects are that the author has ignored research in certain areas, particularly the Near East, and that he seems unnecessarily speculative. As I have suggested previously, Sauer might be read concurrently with Curwen and Hatt, *Plough and Pasture*.[3] This latter work is certainly to be ranked as a very important contribution to the history of agriculture even though Curwen's portion is antiquated in certain respects. Another useful book of recent vintage is the Storck and Teague, *Flour for Man's Bread*.[4] Like Curwen, it is not quite *au courant*. It is also somewhat lacking in originality, though reasonably sound.

[1] Edward S. Hyams, *Soil and Civilization* (London, 1952).

[2] Carl O. Sauer, *Argicultural Origins and Dispersals* (New York, 1952), 3–4.

[3] E. Cecil Curwen and Gudmund Hatt, *Plough and Pasture* (New York, 1953). See my review in *Agricultural History* for January, 1954.

[4] John Storck and W. D. Teague, *Flour for Man's Bread* (Minneapolis, 1952).

On the whole as one surveys the progress achieved since the war he is greatly encouraged. There is some danger, however, that under the stimulation of these new ideas there will be a tendency to jump far ahead to conclusions that may prove unsound. Some Americanists, for example, seem currently engaged in a feverish search for Old World origins of New World culture traits.[5] The suggestion that maize is an Asiatic plant is very interesting, but Dr. Cutler's skepticism on this point appears well-founded.[6] It is also possible that certain comparatively untested techniques have occasionally been accepted at a value greater than their true worth. It seems a very risky business to assign a date of 2500–3000 B.C. to the beginnings of Peruvian agriculture on the basis of Carbon 14 analyses of very limited materials.

Turning specifically to the papers of Braidwood and Cutler which are presented below, it is pleasing to see that these papers not only supplement the publications mentioned above, but also in certain respects serve as an antidote for them. Professor Braidwood's work at Jarmo and Karim Shahir has provided the missing link between the food-gathering and the food-producing societies of the Near East. He has proved what some suspected: that agriculture did not begin in the great river valleys of the Near East but rather in the highlands and then descended to the plains. Furthermore, the domestication of plants and animals seems to have gone hand in hand and not to have occurred separately. It is also apparent that the economic revolution which came with the change from food-gathering to food-producing progressed very slowly and was not necessarily precipitated by the climatic changes which were once supposed to have forced man to find new sources of food.

In connection with Braidwood's paper, attention should be called to his other publications which either amplify or supplement the brief abstract presented here.[7] Neither should one neglect to mention Mrs. Braidwood's charming book.[8] Along with Braidwood's reports of his work at specific sites, the more general articles of Dyson should be read.[9] Then, too, there is the recent symposium on "Did Man Once Live on Beer Alone?" which has a direct bearing on material in both Cutler's and Braidwood's papers.[10]

Dr. Cutler's paper has many interesting items of information, and its generally conservative tone inspires confidence in his conclusions. His arguments for a South American origin of maize are cogent; moreover, his position on the question of single or multiple agricultural origins appears well founded. His discussion of *chicha* was completed before the launching of the symposium mentioned above. Both he and Braidwood are contributors to the symposium, along with Sauer and A. Leo Oppenheim, the author of a recent monograph on beer and brewing in the ancient Near East.[11]

The matter of the chronological priority of vegetative or seed propagation of crops is one of some importance. Dr. Cutler does not believe that vegetative propagation is necessarily the older method. Sauer, on the other hand, favors the priority of roots and tubers over the seed crops. Though evidence is lacking, the hypothesis of Sauer is attractive; an additional argument in its favor might be that the first logical step in the direction of agriculture might be vegetative rather than seed planting. The widespread concept of sympathetic magic would encourage root

[5] For example, Gordon F. Ekholm, "A Possible Focus of Asiatic Influence in the Late Classic Cultures of Mesoamerica," Society for American Archaeology, *Memoirs*, 9: 72–89 (January, 1953).

[6] George F. Carter, "Plants Across the Pacific," *Ibid.*, 9: 62–71.

[7] Braidwood refers to the Condon Lectures of 1952 (see his footnote 1 on page 41). See also, "From Cave to Village," *Scientific American*, 187: 62–66 (October, 1952).

[8] Linda Braidwood, *Digging Beyond the Tigris* (New York, 1953).

[9] Robert H. Dyson, Jr., "The Archaeological Evidence of Cultivated Wheat and Barley in Near Eastern Areas," Society for American Archaeology, *Memoirs*, 9: 7–11 (January, 1953); and "Archeology and the Domestication of Animals in the Old World," *American Anthropologist*, 55: 661–673 (December, 1953).

[10] Robert J. Braidwood, *et al.*, "Symposium: Did Man Once Live by Beer Alone?" *American Anthropologist*, 55: 515–526 (October, 1953). The remarks of Mangelsdorf and Coon, both contributors to the symposium, seem to me to answer the question pretty definitely.

[11] L. F. Hartman and A. Leo Oppenheim, "On Beer and Brewing Techniques in Ancient Mesopotamia," *Supplement, Journal of the American Oriental Society*, 10 (1950). Another one of these monographs possibly of interest to readers of *Agricultural History* is P. K. Reynolds, "Earliest Evidence of Banana Culture," *Ibid.*, 12 (1951).

propagation, whereas primitive man might find it a little more difficult to make the connection between seeds and plant growth.

Whether root or seed propagation was the earliest form of agricultural activity is of less significance than the fact that the domestication of the herd animals progressed in conjunction with the latter. It is even more significant that the great civilizations of antiquity developed where seed planting was dominant.

FROM CAVE TO VILLAGE IN IRAQ

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The one factor on which all historically oriented anthropologists would agree as one of the absolute necessities for the appearance of *civilization* (in a fully meaningful sense of the word) would be full efficient food production. The following account is of how a party of archeologists set out to examine the primary evidence for the original appearance of food production itself—without which the conditions making possible the subsequent appearance of *civilization* would not have been satisfied. The case chosen for examination was that of the appearance of food production in the "nuclear" Near East.[1]

Iraq—or more properly the southern portion of the country, classic alluvial Mesopotamia below Baghdad—is known to every schoolboy as the "Cradle of Civilization." In recent years comparative archeology has adequately documented this familiar idea. The beginning of civilization—meaning specifically the appearance of urban or city life, the formal political state, writing, and monumental art, for example—did come about first in classic Mesopotamia. The formative period began some time around 3500 B.C.; Egypt lagged behind several hundred years; and civilization certainly came later in China and India and may even have been due to stimuli from the original Mesopotamian center. The beginnings of civilization in the New World—in Mexico, Guatemala, and Peru—were independent but probably began as much as two thousand years later in time. Hence one may say of Iraq not only that the earliest civilization in the world began there, but also that it set the patterns out of which were to grow the Western cultural tradition.

What lay before the appearance of civilization proper in Iraq, and how did it come about? As of 1947, when the University of Chicago's Oriental Institute had its first short post-war season near Kirkuk, there were at least four known simple village to town phases earlier than the beginning of the formative urban "Proto-Literate" phase. The earliest of these prehistoric village phases was called Hassuna, after the site near Mosul, where the 1943–44 excavations of the Iraq Directorate General of Antiquities had delineated the period. The Hassuna phase must date back to some time before 4000 B.C. Earlier than Hassuna there lay only the materials of the cave-dwellers back in the time of the Pleistocene "Ice Age." The latest known cave materials of Iraq were those found by Professor Dorothy Garrod of Cambridge University at Zarzi, near Sulaimanyah, which must date back towards 8,000 B.C.

Thus, as of 1947, there was a gap of perhaps 4000 years between the phase of the well established villages of the Hassuna stage and that of the Zarzi cave-dwellers. Hassuna had *touf*-walled (packed mud) houses, simple and decorated pottery, agricultural and craftsmen's tools of stone and bone—in fact the complete catalogue of materials of a simple but efficient farmers' economy, based on agriculture and domesticated animals. On the other hand, the Zarzi cave-dwellers were food collecting savages, who left nothing but chipped flint tools for the archeologist to find. There was clearly a gap in knowledge of the prehistory of Iraq for the archeologist to recover.

[1] This is an abstract of a paper presented at the joint session of the Agricultural History Society and the Mississippi Valley Historical Association in Lexington, Kentucky, on May 7, 1953. The work described here is more fully treated and illustrated in the author's *The Near East and the Foundations for Civilization* (Eugene, Oregon, 1952).

This "gap" deserves to be looked at more closely, on theoretical grounds. It can be logically reasoned that mankind's history—certainly in its economic and technological aspects—can be divided into three great eras: (1) the Food-Gathering "cave-dwelling" era of pure savagery; (2) The Food-Producing era, wherein the domestication of food plants and animals and the establishment of settled villages allowed a subsequent growth of towns, and finally of cities and civilization proper; and (3) the era of Industrialization, wherein the utilization of fuel-powered energy sources and the concentration of men and machines through capitalistic enterprise brought about a new sort of life. We speak of the "Industrial Revolution," beginning perhaps with James Watt and the steam engine. In the same way, the Food-Producing era must have begun in a revolutionary manner. But for all of the Near East—and for us especially Iraq, where the later record is so clear and the consequences so great—it was definitely during the gap in knowledge that the Food-Producing revolution must have come about.

If ever an archeologist wanted a worthwhile problem, here was one! A good enough one, I am happy to say, to justify the University of Chicago in sending to Iraq a little group of scientists to gather new evidence. We were sometimes asked why we had come all the way from America—at considerable expense—to a country with the magnificent antiquities of historic times for which Iraq is famous, to dig for very unspectacular coarse pottery, simple houses, and stone tools. Couldn't we find even better antiquities than these, left by the Indians of the Mississippi valley of our own United States—and at much less expense to our university? The answer is that we could have, but we were not digging for antiquities as museum objects; we were digging for ideas. We wanted to fill the gap in knowledge about one of the most important changes which had ever come about in the whole story of mankind, in the time and place where it first happened.

We chose Iraq because it was there that the great consequence—civilization—first followed the beginnings of settled village life. Also, in Iraq the developments which followed the Hassuna stage were well known. Why did we choose to work in the grassy hill country between Kirkuk and Sulaimanyah—in the valley of Chemchemal town? Even the Hassuna stage, and the stage which follows it, are not known in classic Mesopotamia below Baghdad. The flat alluvium of lower Mesopotamia demands irrigation, and a certain degree of complexity of technological know-how and sense of social responsibility was necessary before classic Mesopotamia could be occupied. The earliest known village sites in the Near East—in Iran, Syria, and Palestine, as in Iraq—lie in the grassy uplands. Even today, winter rains assure spring crops of grain in normal years. It was in these grassy uplands that the wild grains and wild animals which were the first to be domesticated were originally at home. When H.E. Dr. Naji-al-Asil, Director General of Antiquities, suggested that we examine a very early site in the Chemchemal valley which his staff had located, we knew we could not go far wrong.

We did a short exploratory season in the spring of 1948, examining a small mound of the Hassuna stage near Tauq and working for one month at Jarmo in the Chemchemal plain. This was enough to assure us that Jarmo was a fair part of what we wanted. The 1948 spring season showed us the lay of the land. Next followed two years of planning and of scraping up a working budget. While it is said that one can always sell a good idea, one sells good *ancient* ideas only with some difficulty. The basic financing for our operations at Jarmo came from the Oriental Institute of the University of Chicago. We also had available the Institute's essential field equipment.

With our operations at Jarmo and a good base camp assured by the Institute, we broadened the scope of our plans to include eventually three sites earlier than Jarmo. In this, our basic support came from the American Schools of Oriental Research. Dr. Bruce How, prehistoric archeologist of the Peabody Museum, Harvard University, came on a travel grant of the American Philosophical Society; Professor Herbert E. Wright, Jr., of the Department of Geology of the University of Minnesota held an Axel Wenner Gren Foundation for Anthropological Research post-doctoral grant to join us; and several of our younger staff members were also on fellowships.

We began work at Jarmo on September 30, 1950, and continued, with breaks for the winter rains, until May 31, 1951. Jarmo more than fulfilled our expectations. It was so "neolithic" in aspect that it yielded pottery in the upper third of its levels only. Nevertheless, it had well-built mud-walled houses throughout its 7.40 meter depth of deposit. Evidence appeared of two va-

rieties of wheat and a barley; and of sheep, goats, pigs, cattle, the horse, and the dog. Tools were only of stone, either polished, or of chipped flint or obsidian. The obsidian is strong evidence of already established trade; its nearest known source is Lake Van in Turkey. Some of the chipped flint blades were mounted to form sickles, evidently in wooden hafts. The adhesive used to hold the flint blades in the haft was bitumen. We were even able—by industriously saving minute bits of charred wood from the original cooking fires—to have the date of Jarmo established for us by the University of Chicago's radioactive carbon dating project. Professor W. F. Libby tested two charcoal and one snail shell sample for us, yielding an average date of about 4750 B.C. ± 325 years.

The site of Karim Shahir, about two kilometers up-wadi from Jarmo, appears to have been an even earlier open site. I cannot properly claim it was a village, since we could not comprehend its architecture. There probably were some kind of huts in the original settlement, but we found only meaningless scatterings of stones. Nevertheless, the Karim Shahir people had also learned to make simple ground tools, beads, and bracelets. Their tool kit was predominantly of chipped flint, however, and there was neither obsidian nor the sickle blade. As with Jarmo and our two earlier sites, the detailed analysis of the materials in the laboratory is only now beginning; we cannot yet be certain regarding Karim Shahir's plant, animal, and many other types of remains. But Karim Shahir, while it had a much simpler catalogue than did Jarmo, was certainly an open-air establishment, however primitive and temporary. For our purposes in closing the gap in knowledge, it is in many ways more interesting than was Jarmo.

Somewhat earlier than Karim Shahir lay the materials of the cave at Palegawra, fifteen miles east of Jarmo, in the valley east of the Baziyan Pass. Palegawra yielded only a chipped flint industry, of an aspect somewhat later than that of Professor Garrod's cave at Zarzi. Our field impression was that it must lie very close in time to the end of the cave dwelling era.

Professor Wright and Dr. Howe were granted permission to explore a much earlier site on behalf of the Directorate General of Antiquities. This site, Barda Balka, had been located by the Director General, Dr. Naji-al-Asil, and his staff. It was for the purposes of fixing the Acheulean type handaxes and other early flint tools into the gravel strata of their origin that we spent four days there in exploratory trenching. The successful result gave Wright an archeological checkpoint—perhaps as much as 100,000 years ago—in the Pleistocene gravel sequence he was able to delineate in the area.

This is simply an account of field work and of why we believed it worth doing. Prehistoric materials give up their secrets slowly and only with much study. I cannot yet tell you how much of the gap in knowledge we actually closed. I do not believe all of the phases of the gap are yet in hand and, because of the time factor, I cannot present the technical details nor our current interpretations. But it is perfectly clear that we have much evidence for the addition of four completely new chapters in the story of how men first strove towards civilization in ancient Iraq.

FOOD SOURCES IN THE NEW WORLD

HUGH C. CUTLER

Missouri Botanical Garden and Washington University

As soon as life arose there was a need for food.* While a few simple living forms appear to subsist on inorganic materials alone, the use of other organisms as food for animals is probably as old as plants and animals themselves. As the kinds of life increased in number, food habits grew in complexity. Many lower forms of life die when deprived of a certain food but animals which have used diverse food sources can subsist when some of these are absent. These animals also are more flexible in their utilization of substitutes and, as adaptable animals, are tolerant of changing en-

* This paper was presented at the joint session of the Agricultural History Society and the Mississippi Valley Historical Association in Lexington, Kentucky, May 7, 1953.

vironments or moves to other habitats. Man is an adaptable omnivore and has the widest range of any mammal.

There has been a tendency to think of man as an organism dropped, as man, into a strange environment to initiate his search and experimentation for food. In reality man is the end product of a long series of animals and has developed and survived by adapting himself to a changing environment. For food man has probably tried to use almost every kind of material he encountered, soils, salts, ants, cattle, mushrooms, beer, cress, and corn. In all cases man was limited to what raw materials were available. When in need man is, like other animals, less particular about the food he eats, and he uses a wide variety of materials. But of the wide variety of foods which can be called edible, long before the development of agriculture, gathering man found it profitable to collect only those foods which gave an adequate return for the time and labor he invested.

Several years ago I made a survey of possible food sources of the ancient inhabitants of the lower San Juan River basin of Utah and as part of this study I tried for several days to gather enough food to live. This turned out to be a struggle even during the most favorable season of the year and with good metal tools to aid me. I gathered barely enough to keep from being hungry and I could not accumulate a substantial surplus. Only a small population of hunters and gatherers could exist in that region for I had to utilize the plants from a large area. Most of my food came from a relatively few kinds of plants, at that season sego lily bulbs, rice grass seeds, cactus plants, yucca pods, greens of the pigweed relatives and young underground stems of reed grass, rush, and cattail. Of all these foods, a grass gave the greatest returns for my labor. This is true in most regions for the grains have little water and a high food content and they can be gathered readily with primitive equipment. Cactus stems and spinach-like greens were tasty and easy to gather and prepare, but had little food value. I soon tired of the taste of yucca pods, and sego lily bulbs were scarce and difficult to dig. Young underground stems were relatively rare, although excellent in flavor, and I would have destroyed all the plants in a few days if I had not stopped gathering them. Mormon tea (*Ephedra Torreyana*) was an adequate beverage. With the solitary exception of Mormon tea, every one of the plants I found to be edible is used by the Navajos, Hopis, and Utes of the region and has been identified among the remains of the prehistoric Indians of the same region. Mormon tea is sometimes used as a medicine by the Indians but not as a daily drink. In the Southwest every kind of plant part is gathered for food: fruit, seeds, leaves, stems, and underground parts.

The only two plants which apparently were domesticated within the present United States are the sunflower and its relative, the Jerusalem artichoke, although there is some evidence for adding the tepary bean and the pumpkin (*Cucurbita pepo*) to this list. Many gathered food crops of this country would produce good yields and the occurrence of occasional wild plants with unusually large and abundant edible parts shows that the plant could have been improved for man's use. Of the seed crops the Indian rice grass, the wild vetch and the beach pea appear suited for domestication, while many tuber and root-bearing plants eaten by the American Indians can be easily grown. In the West numerous different relatives of the parsnip and carrot were gathered. Yampa, bitterroot and several others could easily have been domesticated. There were sunflowers with large tuberous roots, the sandroot of the Pima-Papago country, the bigroot morning glory of our midwest, and the potato bean of the east and northeast. But the appearance in the Southwest of the already developed crops of corn, beans, and squash about the time of the introduction of agriculture probably made it unnecessary to domesticate new crops.

Far to the south, in the highlands of the Andes of Peru and Bolivia, the natives grow a peculiar assortment of crop plants. Their mainstays are the earth vegetables, foods like the underground stems or tubers of the nasturtium, oxalis, *Ullucus*, and the potato, all of them planted by burying pieces of the tubers from the last harvest. All of these cultivated plants have wild relatives growing in the same region, often as weeds in and about the tilled fields. The center of variation of the edible cultivated nasturtium and of its wild relatives lies in the Andes of Peru and Bolivia. There, too, is the greatest diversity of the tuberous forms of Oxalis, both cultivated and wild. *Ullucus*, an odd plant in a little known family, has many varieties in this region. *Ullucus* has not spread far and the apparently wild plants are very similar to the cultivated ones. The center of potato domestication is in these highlands. The cultivated species,

varieties, and forms surpass in number and variability those found in any other place. In addition, the local farmers gather the tubers of several wild potato species which grow as weeds in and about their fields.

The potato was the mainstay of the highland civilizations, the most important food of Tiahuanaco and the higher parts of the Inca Empire, but it did not become a major crop in other regions. In most of the lowlands it could not compete with corn, sweet potatoes, or mandioca, crops which enjoy a warm climate. We cannot take potatoes from Bolivia and Peru and grow them in the United States without giving them special treatment because they are intolerant of our longer summer days in our high latitudes. The potato we grow probably came from Chile and was brought to us via Europe, where long before it was grown as a food it was planted as a curiosity in botanical gardens. In volume and weight the potato is the world's greatest crop but 70 per cent of the tuber is water, so the calory content of the entire crop is far less than that of corn, rice, or wheat. About 90 per cent of the world's potato crop is grown in Europe, more than a third of it in Russia, and less than eight per cent of the crop is grown in the New World.

Several other vegetatively propagated crops probably were domesticated in the Bolivia-Peru region. Some of these are so dependent upon vegetative propagation that they seldom produce seeds. Among these crops are the edible canna, arracacha, the yam bean, and *Polymnia*, a relative of the sunflower, and Jerusalem artichoke with dahlia-like tubers.

In the Lake Titicaca basin lies the center of origin of at least three locally important seed crops. A lupine, there called *tarhui*, is harvested at altitudes as high as the potato fields. Its seeds are bitter and slightly poisonous until thoroughly washed, so after the Conquest the lupine was replaced in many places by the European horsebean, or fava. The most important seed crop of the highlands is quinoa, an herbaceous plant related to pigweed and not to be confused with the entirely distinct quinine trees native to the eastern Andean slopes. There is an amazing number of quinoa and considerable variation within each variety. One usually finds related weed forms growing in cultivated fields of quinoa and it appears that a major part of the variability of the cultivated varieties springs from crosses with these weeds. The best cultivated varieties of quinoa are erect and little branched, with dull white lenticular seeds with so little soapy taste that they scarcely need to be washed to be palatable. Less desirable and weed-like varieties are low and branched, with dark-colored, shiny, nearly globular, small seeds which are bitter and soapy and must be washed well to be edible. Quinoa seeds are high in protein and attempts have been made to grow the plant in Europe and the United States, usually without success because the plant does not often fruit in the long days of our summers. The quinoa and oxalis occasionally found growing in Mexico were introduced there after the Conquest, but in prehistoric times were grown from Chile and the Argentine to Colombia. Another member of the same genus, *kañhua*, is found only in parts of Bolivia and Peru, and has a small number of varieties centered a short distance south of Lake Titicaca.

The several beans grown in Bolivia and Peru were important only in the lowlands. On the Pacific coast the Indians grew varieties of common and lima beans second in number only to those of Mexico and Guatemala as well as the jack bean, *Canavalia*. This genus of beans is found in both the Old and New Worlds but the species of each hemisphere are distinct. The cultivated *Canavalias* of Peru and most of those from late sites of southern Arizona fall within the species called *Canavalia ensiformis*, but some of the seeds from a late level of Tonto ruin, a Pueblo III site in central Arizona, may belong to another species.

All squashes and pumpkins and all the wild species of the genus to which they belong are natives of the New World alone. The Hubbard types of squash may have originated in Bolivia; the turban forms of the same species (*Cucurbita maxima*) appear to come from farther east. Our knowledge of the early distribution of squash species has been greatly extended by the discovery of seeds and stems of the perennial horse-squash, *Cucurbita ficifolia*, and of *C. moschata* in early levels of a site in North Coastal Peru excavated by Dr. Junius Bird.[1]

In this high Andean region centered about Lake Titicaca there is an agriculture based on plants propagated vegetatively *and* plants propagated by

[1] T. W. Whitaker and J. B. Bird, "Identification and Significance of the Cucurbit Materials from Huaca Prieta, Peru," *American Museum Novitates*, No. 1426 (New York, 1949).

seeds. All of the species were domesticated in the region and, to judge by the archeological remains, the many native names, and the numerous varieties of each species, both groups of plants are ancient. It is likely that when man began to farm in this region, he used the tuber and seed bearing food plants which he previously gathered. In this same Lake Titicaca region the alpaca and llama were domesticated.[2]

The llama is the best known of the four American camel relatives. It, and the alpaca, are known only as domesticated animals. Its primary use is in transporting cargo. Llama dung, gathered, dried, and used for fuel, is probably more valuable than the animal's meat, hide, or wool. The llama is thought to represent a domesticated form of the guanaco. The guanaco is the most tolerant of environment of the American cameloids and formerly was an important source of food and clothing, especially in Argentina, but has been exterminated over most of its former range until only a few semidomesticated herds still persist. All four of the American cameloids will interbreed and produce fertile offspring. The alpaca has characteristics which suggest that it is a hybrid, the result of crossing of llama and vicuña. The alpaca is not used for transportation but is valued for its wool, hides, dung, and meat. The vicuña is the only one of the four cameloids which has never been domesticated but it was systematically rounded up in drives organized under the Incas. When caught, some animals were killed but most were only clipped for their hair and then released to breed and increase.

Near Lake Titicaca the guinea pig probably originated and here it is still found as a household pet and food animal, running about the house and subsisting mainly on table scraps and some greens gathered for it.

Herd animals, like the alpaca and llama, are usually associated with seed agriculture; household animals like the guinea pig are considered associates of vegetative crop planting.[3] In the highlands we do not know which, llama or guinea pig, was domesticated first, so this throws no light on which one of the two groups of food plants is older.

Many wild animals are caught, kept as pets, and utilized as food, but these cannot be considered as truly domesticated. They are not kept to breed and increase about the house although they are to be considered as semidomesticates or potential domesticates. The only other truly domesticated animals native to the New World are the turkey of North America and the Muscovy duck of northern South America. Some breeds of dogs may have originated in the New World by crosses of the Old World dogs with their relatives the wolves of this hemisphere, but there is little evidence for this. An odd breed of dogs, which disappeared soon after the Conquest, was kept for food in the region about the Caribbean. Some of the early records contain descriptions of these dogs and there are old pottery figurines from the Tarascan area of Mexico, some of them showing a dog with an ear of corn in its mouth. The ceremonial feeding of dog effigies by the Lacandones of the Mexican Rio Lancaja region probably is a survival of the use of corn to fatten these meat animals.

Corn is the greatest crop of the New World and probably one of the oldest. The best evidence available indicates that corn originated on the eastern slopes of the Andes in Colombia, Ecuador, Peru, or Bolivia. I favor the last two countries for there, in a region where the last steep slopes of the mountains meet the savannas and forests of the upper Amazon, the natives grow a kind of corn which possesses many characteristics which are considered primitive.[4] In this corn the plants are slender and branched at the base, the leaves long and slender, the ears long, slender, flexible, and not greatly compacted and condensed in length. The cobs are brownish in color, the brownish grains borne on pedicels, the pollen grains small. All of these are characteristics of wild-growing grasses rather than those of highly developed corn varieties. No one has ever seen wild corn but, with a few changes, none of which is greater than ones we already know in corn, a wild species of gama grass growing in the same region as this primitive corn of Bolivia and Peru could become a corn-like plant.[5]

After its domestication, corn was carried northwards and up the slopes of the Andes. In Guate-

[2] R. M. Gilmore, "Fauna and Ethnozoology of South America," in *Handbook of South American Indians*, J. H. Steward, ed. (Bureau of American Ethnology *Bulletin*, 143, 6 vols., 1946–1950), 6: 423–462.

[3] Carl O. Sauer, *Agricultural Origins and Dispersals* (New York, 1952), 84.

[4] Hugh C. Cutler, "Races of Maize in South America," Harvard University, *Botanical Museum Leaflets*, 12: 278 (1946).

[5] Hugh C. Cutler, "A Comparative Study of Tripsacum australe and its Relatives," *Lloydia* 10: 233 (December, 1947).

mala corn encountered another species of Tripsacum and probably crossed with it to produce the plant known as teosinte.[6] Enough of the characteristics of the new grass entered corn to give it added vigor and variability and to this we owe the great number and diversity of the races of corn in Guatemala, Mexico, and the United States.[7]

The hypothesis of a South American origin, a crossing of maize with Tripsacum to produce teosinte, and the consequent introduction of new germ plasm and variability into maize fits all the known facts more accurately than any other hypothesis. Although this tripartite hypothesis was proposed in detail 14 years ago, no better one has been needed or suggested. It is unlikely that we will ever find archeological material of corn from the eastern Andean slopes because they are moist and vegetable material soon decays, but the presence of a primitive kind of corn, of a variable relative of corn, and of many dominant characters of corn in this area support a belief in this as the place of origin. The fact that no corn has been uncovered in some early sites of dry coastal Peru while from sites of the same age and older in our Southwest we have excavated forms of pod corn, a primitive kind of corn, does not invalidate this hypothesis of a South American origin. Corn varieties are very rigid in their cultural requirements and it is likely that corn was able to travel faster, with the aid of man, along the eastern slopes of the Andes and through Central America than it could be brought over the cold heights of the Andes to the Pacific Coast. But this is purely hypothesis and must be tested when new evidence is uncovered.

There is good support for the belief that Tripsacum introduced new variability into maize of Central and North America. The recent thorough study of races of maize of Mexico by Wellhausen and others delimits four Ancient Indigenous Races, races which have been in Mexico so long that their source is unknown, and four pre-Columbian Exotic Races, races which probably arose in other regions and were brought to Mexico long ago. All of the 24 other races of corn in Mexico are considered to have developed by crossing within the basic eight races and teosinte, the hybrid of Tripsacum and maize. Certain of the derived races reached the United States and the great corn industry of our Corn Belt owes its origin to the crossing of a descendant of one of these Mexican races with Northern Flint corn to produce the vigorous and high yielding modern dents.[8]

As a result we grow more than half of the world's corn crop and the high yields we obtain have made it possible for one man on the farm to produce enough food and raw materials to support nine people off the land. Our industrial civilization is founded on corn just as much as were the earlier civilizations of the Aztecs, Mayas, and Incas.

Far to the east of the Andes, in that part of Brazil which stretches out towards Africa, is a region of scrub desert covered mainly by thorny shrubs, cacti, and other drought resistant plants. There grow many species of *Manihot*, a genus of woody plants, some of which bear starchy water-storing roots. The roots of several of the wild-growing species are gathered by the inhabitants in times of food scarcity. In this northeastern region of Brazil, where the largest number of varieties and the greatest range of variation within the species is found, the mandioca, or cassava, plant was domesticated. There are two groups of mandioca varieties, the bitter and the sweet. The roots of the bitter forms must be treated to remove a poisonous juice while those of the sweet forms can be used as food without such treatment. The bitter varieties produce better crops under the conditions of northeastern Brazil, but they have not spread far. A few sweet varieties are grown from Argentina to Mexico. Brazil is still the principal producer of mandioca, although most of it is used at home and the total production for export of Africa and the East Indies is far greater.

Mandioca is propagated, like sugar cane, with sections of the stems. Some varieties are ready to harvest in six months while others may take as long as three years to mature a good harvest of roots. Before the harvest a farmer's wife may dig up a single root from a plant for the next meal, then refill the hole so the plant continues to grow, a practice similar to that of the Maine farmwife who gathers a few early potatoes. Corn is a secondary crop over much of Brazil and mandioca is the mainstay. Sweet varieties of mandioca are eaten boiled, but most mandioca is prepared as a dry meal by peeling the roots, grating them,

[6] Paul C. Mangelsdorf and R. G. Reeves, "The Origin of Indian Corn and its Relatives," Texas Agricultural Experiment Station, *Bulletin* 574 (1939).

[7] E. J. Wellhausen, L. M. Roberts and E. Hernandez X., in collaboration with P. C. Mangelsdorf, *Races of Maize in Mexico, Their Origin, Characteristics and Distribution* (Cambridge, 1952) 199–205.

[8] W. L. Brown and Edgar Anderson, "The Southern Dent Corns," Missouri Botanical Garden *Annals*, 35: 255–268 (September, 1948).

squeezing out the poisonous juice, and then drying the meal on a flat plate of stone, pottery, or metal over a slow fire. This meal can be kept for a long time and eaten dry without any further preparation, or mixed with shredded meat.

An alcoholic beverage is sometimes prepared from the sweet forms of mandioca by boiling the roots, masticating them slightly to add saliva, and putting them in a pot with water. The saliva contains an enzyme which changes starches to sugar and the sugar is acted upon by yeasts to produce alcohol. This process is relatively simple and can be applied to seed as well as root and tuber crops. It is an old process, widely spread throughout most of South and Central America, although strict controls on alcoholic beverages and the acculturation of the Indians has almost eliminated native beers in Central America. The process reaches its greatest refinement in the highland valleys of Peru and Bolivia.[9] There corn is ground, mixed with saliva, added to water and, after a day, heated to stop the enzyme action. The liquid is placed in other pots to ferment for three to eight days, depending on the temperature, and then is ready to be drunk. Shops selling chicha, as the native beers are usually called in American Spanish, display varied signs to advertise their wares. Tassels, usually considered a symbol of nobility in Inca areas, are widely used just as we employ a crown or shield to suggest noble lineage. Flowers added to signs suggest that the brew is freshly prepared and suitable for a holiday.

There is another source, besides saliva, for the starch-converting enzyme, and that is sprouted, or malted grain. Grains are soaked in water and allowed to germinate until the young shoot is nearly as long as the seed. This is the method employed with barley in the beer industry. It is well known in the Andes where seed crops are common but unknown to the east, where the roots and tubers are the main foods. I think malting was practiced in the Andes before the Conquest for it is mentioned in early reports and several native languages have names for all the steps in the process. The complexity of the process makes me doubt that it can be as ancient as the chewing method of preparing the mash for brewing.

Corn beer is an important food in much of highland South America. In some places it is the major means of consuming corn and the average inhabitant may drink more than a liter of chicha per day. It is likely that the yeasts provide substances essential to the diet but otherwise unobtainable in foods of the region.

The use of coca leaves is another one of those complex methods which, like the extraction of the poison from mandioca roots and the preparation of corn mash, probably arose after considerable thought and experimentation. Shrubby tea-like plants of coca are grown by planting seed in beds and transplanting the seedlings to specially prepared terraces on the moist eastern slopes of the Andes of Peru and Bolivia. The young leaves are picked and dried and transported to the highlands where most of them are chewed or, more accurately, soaked and sucked, with a small piece of a bar of the ashes of the quinoa plant mixed with clay to hold the ashes together. The use of an alkali with a drug plant resembles the pan or betel nut chewing of the Far East. Coca was used by only a small part of the Indians at the time of the Inca Empire but the coca habit has spread so far over Bolivia and Peru that the development of these countries is seriously hindered.

There are many other seed-grown plants on the same slopes where the seed-sown coca plant was domesticated. Among them are the tree tomato, several kinds of papaya and passion fruits, and the pepino (*Solanum muricatum*, a relative of the potato with a fruit tasting like a cross between a cucumber and a melon). The many kinds of cacao, or chocolate, fruits of the eastern Andean slopes are gathered for the sweet pulp surrounding the seeds and in pre-Conquest times it is unlikely that the seeds or chocolate beans were used as they were in Mexico. The plants are often grown from seed.

Peru and Bolivia constitute the greatest center for New World cultivated plant origins but they are closely followed by the highlands of Guatemala and Mexico, where the lima bean, scarlet runner, and the tepary bean originated and where the center of the common or kidney bean may lie. In the Guatemala-Mexico plant center the husk tomato was domesticated long ago and when weed wild tomatoes reached Mexico from the center of the tomato species on west coastal South America, the very similar tasting tomato was domesticated.[10] Some varieties of peppers were domesticated as well as two species of squash, *Cucurbita*

[9] H. C. Cutler, "Chicha, A Native South American Beer," *Botanical Museum Leaflets*, 13: 33–53 (1947).

[10] J. A. Jenkins, "The Origin of the Cultivated Tomato," *Economic Botany*, 2(4): 391–392 (1948).

pepo and *C. mixta*. The importance of Mexico and Guatemala as a center of origin of maize varieties has already been mentioned.

Only one of the two plants domesticated within the United States and only one of the ten wild edible plants which were selected as possible domesticates can be propagated vegetatively with ease. All of the plants listed for Mexico are grown from seed, none propagated vegetatively. In the Peru-Bolivia center about half of the plants, and many of the most important ones, are usually propagated vegetatively while, to the east in Brazil and the countries of the Amazon, Orinoco and Paraguay watersheds, most plants, like mandioca, the arrowroots, cannas, and pineapples, are propagated from pieces of stems or roots. In all these areas it appears that man used whatever was available in his neighborhood. I do not believe that agriculture began with root and tuber crops and that these earth crops are more ancient domesticates than the seed crops.

Nor do I believe that we have as yet any valid evidence for a single center of origin of agriculture. Certainly there is little in the cultivated plants to suggest that this is true. Of all the hundreds of species man plants, only the bottle gourd, *Lagenaria*, is generally accepted as having been grown on both the Old and New World continents prior to Columbus, and even in this, the varieties grown in the Old and New Worlds appear to be distinct. While Polynesians are usually considered to have cultivated the sweet potato before white men arrived in the islands, the fact that several species of wild and cultivated species of the same genus, found in both hemispheres, have edible roots, makes it desirable to seek better proof than the sketchy reports of the early explorers that the species native to the Americas is identical to the prehistoric ones of the islanders.

There is good evidence for very early post-Columbian contacts between Peru and Asia both across the Pacific and through the Mediterranean. Natives of the interior of Assam who grow corn which resembles that of Peru, also grow squash, bean, peanut, Cyclanthera, and amaranth varieties typical of Peru. It should be possible, by a study of the varieties grown in Asia and a comparison with ones still grown in Peru, to define clearly the area from which the migrants came and perhaps to identify the route and even the travellers who carried them to Asia. The many cultural similarities which have been assembled by proponents of theories involving trans-Pacific movements are impressive, but so far there is no positive evidence which can be pointed to in the cultivated plants.

TRAILING SHEEP FROM CALIFORNIA TO IDAHO IN 1865: THE JOURNAL OF GORHAM GATES KIMBALL[1]

Annotated by EDWARD N. WENTWORTH

Armour's Livestock Bureau

Approximately fifteen million sheep were trailed out of the Pacific states to the Rocky Mountains and western plains areas during the three decades following the Civil War. Direct records of these drives are scarce. Photographers and artists were then practically nonexistent in these regions and

[1] Gorham Gates Kimball was born in Calais, Maine, April 5, 1838, and died in Red Bluff, California, December 21, 1904. He was eighth in descent from Richard Kimball who came from England in 1635, and his father, James G. Kimball, showed enough pioneer spirit that in 1820 he moved his family from Massachusetts to the frontier of Maine. (Through common ancestry, Kimball and the editor are distant—6th and 7th—cousins). In October, 1857, Kimball reached San Francisco aboard the steamship "Golden Gate" from Panama. After two short-term jobs with a lumberman and operating a one-horse dray in that city, he entered the employ of the California Steam Navigation Company. His uncle, General Alfred Redington (referred to occasionally in the journal as "the Gen'l."), was manager of the line, whose steamers plied upstream to Red Bluff, then the head of navigation. In partnership with the General, he entered the sheep business in 1862, and after two years of profitable operation decided to make the drive to Boise City to serve the

very few of the trail drivers kept diaries, or even made notations, concerning the day-to-day incidents. Recently the journal of such a trip has become available—that of Major Gorham Gates Kimball[2]—covering a drive in 1865 from the vicinity of Red Bluff, California, to Boise City, Idaho Territory.[3]

Record and tradition agree that Major Kimball was the first to succeed in trailing a large band of sheep eastward from the Pacific Coast region. He traversed southern Idaho and southwestern Montana to the Missouri River (probably to the Last Chance Gulch in Montana). There he sold his sheep, bought mules, and drove them back to Sacramento for sale at the mines. He realized a substantial profit on the combined transactions, but lost it when he made a loan to a friend. This failed to discourage him, however, for the next year following his return (probably 1867) he drove another large band to Virginia City, Nevada, where he sold his muttons directly to the miners.[4]

Except as a travel-way for sheep, the route followed by Major Kimball to Idaho was not blazoned by him. Just before his seventh camp at

miner's market. With George Hoag and John W. Burgess, he pooled resources to drive a band of 3700 sheep.

In 1870 Major Kimball formed a new partnership with J. C. Tyler and purchased a band of 2600 head, over which Kimball took personal charge. His interest in sheep production grew, and he acquired control of several ranches. However, he did not participate actively in their operation.

In 1876 Major Kimball formed a co-partnership in the mercantile business with L. S. Welton, buying out the firm of Tibton & Burtt. A year later, Welton sold out to Joseph Spencer Cone, a native of Ohio, who had pioneered near the Nomi-Lackee Indian Reservation from 1857 to 1868 where he held the beef contract for the Indians. The firm's name was changed to Cone & Kimball, and the two men did a big job of financing sheepmen, cattlemen, grain farmers, and fruit growers. The new organization, engaged in the wholesale and retail grocery business, soon developed into the leading merchandise establishment in northern California. The firm was popular among dried fruit, wheat, and wool buyers. It also operated a warehouse business and a rolled barley mill. Kimball managed all the business except the sheep. Red Bluff became one of the most active wheat markets in the state, and as a wool market it rivalled San Francisco and Bakersfield. Cone soon became the most aggressive sheep operator in northern California, his principal partnership being Cone & Ward.

[2] Kimball prepared his journal at the request of his mother in Maine, and despatched it to her March 11, 1866. On his mother's death, the journal was given to Kimball's sister, Mrs. King, who brought it to California. She, in turn, bequeathed it to her daughter, Miss Annie King of Red Bluff, who requested A. T. Spencer of Winters, California, to place it, after her death (which occurred in 1946), in an historical library or museum. Through the courtesy of Mr. Spencer, it was made available to the editor before final deposit with the California State Historical Library in Sacramento.

[3] Acknowledgments and thanks for unusually broad assistance in assembling the supplementary information accompanying the journal are due L. A. McCoy of Red Bluff, the late D. B. Lyon of Red Bluff, Lyle H. Cook of Cedarville, currently president of the California-Nevada Federal Sheep Grazers Association, and Frank S. Reager, Glenn, California, the secretary of the Colusa County Historical Association. They extended almost unlimited cooperation, traversing several sections of the trail personally with the editor. In addition, Messrs. McCoy and Reager checked numerous county and local records, and made substantial contributions through the results of their research. W. S., S. S., and Robert Skinner (three generations respectively) of the SS Ranch, Jordan Valley, Oregon, and Chesley P. Seeley, Chief of Range Management, Region I, Bureau of Range Management, Portland, Oregon, furnished invaluable assistance. Gorham Cone Ward, a grandson of T. M. Howell and a namesake of both Major Kimball and "Joe" Cone furnished valuable guidance and several newspaper records concerning contemporary events in the lives of Major Kimball and his business associates, while Lawrence B. Gibbs of East Pasadena, California, a grand-nephew of Major Kimball, contributed to personal matters dealing with the Kimball family. A. K. Hanson, Range Manager, Vale, Oregon, Roy A. Shannon, Ruby Ranch, Donner, Oregon, J. K. Sexton of Willows, former president of the California Wool Growers Association, William T. Jenkins of Johnsonville, California, and Mrs. Gertrude McDevitt of the Idaho Historical Museum, Boise, were very helpful in their respective geographical areas. Henria (Mrs. H. C.) Compton of Chico, Annabelle (Mrs. J. K.) Sexton of Willows, and Camille (Mrs. E. L.) Hart of Red Bluff furnished many clues to elusive details. Finally, the late Fred A. Ellenwood of Red Bluff, former president of both the California and National Wool Growers Associations, W. P. Wing of San Francisco, Secretary of the California Wool Growers, and Grant Wilcox of Red Bluff, added much to the editor's general knowledge of the background surrounding Major Kimball's drive.

[4] J. M. Guinn, *History of the State of California and Biographical Record of the Sacramento Valley, California* (Chicago, 1906), 1541.

Cold Spring he struck the Noble Road pioneered by William H. Nobles in 1851.[6] This branched off the notorious Lassen Cutoff to the gold fields from the Humboldt River in Nevada, at the Hot Springs near Black Rock. It crossed the Smoke Creek Desert to Honey Lake—thence, it ran north of Honey Lake and Mount Lassen, to Shasta City and nearby Fort Reading on the Sacramento River, above modern Red Bluff. Kimball followed this route eastward after leaving his camp at Cold Spring until he left Smoke Creek Station, on his twenty-fifth day. Then, turning north, he used much the same route as the Chico-Ruby City saddle train.[8] The first train carrying forty passengers, all muleback, had left Chico on April 3, 1865, passed through Susanville, and thereafter followed the Noble Road to Smoke Creek.

The Mount Lassen area was still wild country in 1865. Passes along the streams and over the mountains had been explored and the principal geographic features named. Numerous infant settlements existed which later achieved permanence. Peter Lassen had led immigrants over his so-called "cutoff," and both he and John Bidwell had visited many spots in northern California, each having established his own ranch. In 1844 or 1845 Lassen located on the east side of the Sacramento, south of Red Bluff and across from modern Corning. During 1849, Bidwell purchased the grant on which he developed the magnificent Rancho Arroyo Chico, while nearly contemporaneously the city of Chico was established on part of its sweeping acreage.

A party of fifty, under the command of General Fremont, spent three weeks at Lassen's Ranch in 1846. The next year Lassen sold half of his land so as to participate in a steamboat venture.[7] When this failed in 1850, he left the immediate region, though six years later he established a cabin in the Honey Lake area, near Isaac N. Roop, and within the environs of modern Susanville.[9]

Kimball had to drive his sheep through the territories of several wild tribes of Indians. The Washoes claimed hunting grounds to the southeast of Honey Lake, extending as far north as Susanville. To the east were the Piutes, their inveterate enemies, who claimed most of Nevada. Chief of the latter tribe was Old Winnemucca, who posed as a friend of the settlers, with headquarters at Pyramid Lake. At the time that Kimball passed through this section, however, neither tribe was technically at war with the whites.

To the north of Mount Lassen and the Honey Lake area, were the Pit River Indians, with sub-tribes in Dixie Valley and on Hat Creek.[9] Kimball was especially warned against the latter group. To the north of the Pit River Indians were the Modocs and Bannocks, who occasionally raided the southeastern Oregon settlements.

The principal difficulties for the settlers lay with the Pit River tribes, and some renegade bands of Piutes led respectively by Black Rock Tom, Young Winnemucca, and Smoke Creek Sam.

In the vicinity of Red Bluff the Indians had been quiet for several years. During the early 1850's they had been placed on reservations. Three tribes, the Nomi-Lackees, the Nomi Cutts, and the Mirmucks, occupied the reservation where Kimball assembled his flock. Its headquarters was four miles northwest of Flournoy and seven miles northeast of Paskenta, on the north side of the valley of Thomes (pronounced Tom's) Creek. When mail service was authorized here, some employee of the federal postal service, either ignorantly or carelessly, changed the popular spelling of the word Nomee to Nomi, but made no corresponding change with Lackee, and the mis-

[6] W. Turrentine Jackson, *Wagon Roads West* (Berkeley, 1952), 168; Asa Merrill Fairfield, *Fairfield's Pioneer History of Lassen County, California* (San Francisco, 1916), 17. Noble's name officially ended in "s", but it is the custom in the early California histories, and locally today, to drop it, so the editor uses the traditional form, viz., Noble Pass and Noble Road.

[8] Mrs. Gertrude McDevitt, of the Idaho State Historical Museum, states that Ruby City, Idaho, was one mile north of modern Silver City. It was not in existence long enough to appear on the standard maps of the day, since Silver City grew northward rapidly and engulfed it.

[7] Fairfield, *Pioneer History of Lassen County*, 170.

[9] *Ibid.*, 31.

[9] Honey Lake lies in a valley east and somewhat south of Susanville, in Lassen County, California. The first settlements between the Nevada deserts and those on the northern Sacramento River were made around it. The lake got its name from a sweet sticky substance, perhaps of aphid origin, that collected on the vegetation when the lakebed was dry. Some of the men with Noble's party in 1852 staked claims in that region, but failed to return the following season to perfect them. In 1853, Isaac N. Roop, then postmaster at Shasta, took up a claim at the head of Honey Lake Valley, but did not finish his cabin until July, 1854. Hence the Honey Lake-Susanville area had been occupied, to a degree at least, for more than a decade preceding Kimball's drive.

spelled name stuck. In his own longhand script, Kimball further changed the spelling to "Name Luckee." The plaque marking the site of the old headquarters reads:

"Indian Military Post 1854–66/ Nomi-Lackee Reservation/ Controlled over 300 to 2500/ Military Indians/ U. S. Survey of 1858 showed/ 25,139.71 Acres in Reservation/ Indians moved to Round Valley in 1866."

The first private ranch established in the region belonged to Colonel Benjamin F. Washington, a descendant of Samuel Washington, elder brother of General George Washington.[10] The genealogical chart in the Mount Vernon reference library shows him as a publisher who went to California in 1849.[11] The location of "Old Ben's" ranch headquarters is a matter of dispute, some claiming that he took over the old government buildings, and others that his cabin was located about a mile to the west before surveyor's lines had been established and legal questions settled. However, some reservation lands had been sold to whites as early as 1861.

[10] Colonel B. F. Washington, publisher and first editor of the *San Francisco Examiner*, gained the property at the headquarters of the Nomi-Lackee Reservation when Vincent E. Geiger, quondam superintendent, was forced to flee from the United States on a charge of wantonly killing Captain Wells in front of the Magnolia saloon on Main Street in Red Bluff. Some accounts indicate that Colonel Washington's son Frank was an active participant in the escape. Geiger had secured title to some of the reservation lands in the early 1850's. Colonel Washington was the president of an emigrating company of 76 carefully chosen young men from Jefferson County, Virginia, who made the overland trip in 1849. It was one of the most carefully planned and best equipped outfits ever to cross the plains. Its supplies were shipped by boat from St. Louis to St. Joseph where some horses and 100 mules were purchased. They had sixteen "emigrant" wagons and two large wagons of sheet iron, shaped like boats, with which they could cross rivers. On arrival at the diggings the iron could be cut up for rockers so as to pan gold. They left St. Joseph May 4 and arrived in the Sacramento Valley on October 1. Plenty of supplies were still on hand in addition to $10,000 more in essentials which were shipped around the Horn to San Francisco. (Information from manuscript compiled by L. L. McCoy of Red Bluff). There was another branch of the Washington family in the Sacramento Valley, descended from Lawrence, also an elder half-brother of General George Washington.

[11] M. Irene Warren, Librarian, Mount Vernon Ladies Association of the Union, Mount Vernon, Virginia. Letter, March 10, 1953.

Major Kimball probably assembled the 3700 sheep on the open meadows two miles to the west of the old government headquarters. The general aspect of the terrain makes this conclusion natural, since the country was rolling and open, and the creek very convenient.

Evidently young Kimball admired the form of theatrical programs, for the second page of his journal comprised a veritable "Dramatis Personae." First he listed the "Company," consisting of G. G. Kimball, John W. Burgess, and George Hoag.[12] No mention is made of Burgess's duties but it is obvious that he served as teamster. Then appeared the "Indians," Dick and Buck. Following them were the "Dogs," Jim and Flora, whose timely warnings at night and whose tireless work in the excessive heat and along the rugged manzanita and tree-covered slopes by day (each did the work of two dogs under normal circumstances) failed to evoke further reference to them by name. Then came the "horses": including "Blackbird, my riding horse"; "Lizzie, George's riding horse"; "Bronco, Dick's riding horse"; "Riley, Buck's riding horse"; and "Brack and Dick, the team horses." Finally follows the "populace" of the librettos, the main body of "3700 sheep."[13]

[12] According to Guinn, *History of the State of California*, 1199–1200, George Hoag was born in Dundee, Scotland, in 1837, and came to the United States in 1857. He arrived in California the next year. In July, 1860, he and a partner drove sheep to a location west of Red Bluff. The *History of Tehama County* (San Francisco, 1880), states (136) that he bought 100 head of sheep near Sacramento and later trailed them to Tehama County. Shortly thereafter the band was divided, and he took his share to land which he had acquired west of Corning and near Paskenta according to a statement of his daughter-in-law, Mrs. Altha Hoag, April, 1953. On June 5, 1865, the Tehama County history reports, he left his ranch with 3500 sheep, the first band ever driven from California to Montana. These were disposed of at an excellent profit. Hoag's ranch was about one day's sheep-drive south and west of the Nomi-Lackee Indian Reservation headquarters. Hoag died in Red Bluff on January 20, 1922.

Kentucky was the native state of John W. Burgess, who was born there June 5, 1819, and who died in Red Bluff in 1899. Burgess ran sheep in Tehama County, and made a trip to Montana in addition to the drive which Kimball describes.

[13] The number of sheep contributed by Kimball and by Hoag for the drive is a matter of speculation. Guinn, *History of the State of California*, 1199–1200, says that

During his studies of interregional sheep trails out of the West, the editor has observed the route and has inspected at close range all but seven of the camp-sites which Major Kimball utilized on this trip. Wherever possible, photographs were taken of the camp-sites and of other landmarks or locations mentioned. In this project I was aided by an old-time college associate, D. Howard Biller of Pomona, California, who furnished all pictures other than those indicated by the captions. Too detailed an examination may have engendered too many comments inserted between the journal entries, but Major Kimball cut across a turbulent frontier tense with Indian alarms and political disputes and reacting to the pressures of the American emigrant spirit of the mid-nineteenth century.

One striking point in retracing this route is the accuracy of Major Kimball's estimates of the daily distance traveled. Lyle and Elmer Cook of Cedarville drove Biller and the editor over all segments of the trail between Susanville and Soldier's Creek which could be reached by Ford pickup or jeep, and it was discovered that the Major's daily reports of miles traversed were accurate within a few hundred yards.[14] Since Kimball personally had to make many deviations from the direct trail, since sheep do not travel a very straight line while grazing along a strange route, and since winding valleys and canyons were encountered, it is evident that he must have employed some instrument with which to register the distance. Perhaps he had one of the historic Mormon "roadometers" on his camp wagon,[15] for one is known to have been used to measure the distance along the saddle-train route between Chico and Ruby City early in the spring of 1865.[16] A distance of 332 miles was recorded from Susanville to Ruby City.

Major Kimball's journal follows, with interpolated comments between most of the daily entries:

Sheep Ranch, Name Luckee [sic]
Tehama County, Cal.
June 6, 1865

Camp No. 1, June 6th, 1865. Drove 12 miles to

Hoag left his ranch June 5, 1865, with 3500 sheep. Kimball mentions 3700. Guinn states (1541) that Kimball bought 700 head, and after two years "drove his sheep to the Missouri River through Idaho." A flock of 700 head would not increase to 3700 in two, or even three, seasons of breeding, nor would it decline to 200 except through a disaster which Kimball could not have avoided recording. Similarly, unless Hoag bought many more sheep than would seem possible under present-day knowledge of his resources in 1865, it is impossible that he could have owned 3500. Even under optimum practical conditions, 100 sheep in 1860 could not have increased to more than 1200 head by the spring of 1865, and the band would more likely have been 800 to 900. By figuring Kimball's 700 head in the same manner, the most he could have had, with every break in his favor, was 3450 head, and the true figure was probably nearer to 2800 or 2900 head, totalling approximately 3700 for the two men.

It is also obvious that Kimball with 3700 sheep and Hoag with 3500 head could not have combined for the drive. McCoy wrote, April 22, 1953, "From my experience driving sheep I am sure that four men and only two dogs could not drive 7200 sheep to Susanville, making such long drives in hot weather. From Susanville on it would have been nearer possible, but . . . very hard to do. From Red Bluff to Susanville or Alturas, sheepmen always used to figure one man and one dog per thousand head. East of Susanville or Alturas, one man and his dog could handle more than a thousand head. Note that a dog for each man is important. A man without a dog over those mountains is very nearly helpless. And those long drives in the heat are very difficult. Hoag said 'about 3500', Kimball said '3700'. I think 3700 was all that could have been in the band."

Finally, McCoy wrote, April 24, 1953, "They could not have crossed 7200 sheep on the small ferry (Jelly's), and made the miles noted for June 9th or 10th. It took that ferry quite a little time to make a crossing and, with the time needed to load and unload, they could not have made the crossing and covered the miles in the heat of either day. They might have crossed on the morning of the 10th, and made the six miles to "Old Man" Love's, but with only two dogs it does not seem possible with 7200 sheep. It would have taken a lot of time just to get each load on the ferry, and he says each day that it was very hot and the country very dry." Hence the number which Kimball reports—3700 head—is probably correct, and Kimball apparently contributed 2800 to 2900, while Hoag furnished 800 to 900.

[14] Camps 26, 27, and 28 could not be checked in 1952 on account of the thaw from the heavy snows of the previous winter, but were visited by jeep in 1953.

[15] Descriptions and original references concerning the "roadometer" may be found in Maybelle Harmon Anderson's *Appleton Milo Harmon Goes West* (Berkeley, 1946), 12–13.

[16] Spelled "rodometer." Mention of this device on the route of the Idaho saddle train may be found in Fairfield *Pioneer History of Lassen County*, 384.

North Spring at Grayson's Sheep Ranch—weather warm—Grass very good, had some trouble in crossing Elder Creek where we took dinner; on the whole, pleasant day.

● Perhaps young Kimball was joking in his misspelling of the name of the Reservation, "Name—Luckee," as he was about "April Fool" as he closes his journal. Elder Creek was some two miles north of his probable camp-site on the Nomi-Lackee Reservation, and since he had trouble crossing the creek, he probably kept on the south bank until he reached the Grayson headquarters. The Rawson & Grayson sheep ranch was mostly—perhaps entirely—on the north side of the creek, and the headquarters were on or near the creek in the southeast quarter of Section 13, T25N, R4W. L. A. McCoy believes North Spring was a little north and east of this point, but it is now inaccessible from the roads.[17]

Camp No. 2, June 7th, 1865. Drove 12 miles to Red Bluff. Camped back of the Town, where we are preparing for the trip. Loading our waggon [sic] in Town, repairing saddles, etc. Lay over here tomorrow and roll the next day. Shall take the old Hat Creek route to Susanville to save toll.

● Kimball's camp-site was probably west of Red Bluff, a half-mile to a mile north of the bridge over Reed's Creek. The old Hat Creek route to Susanville ran north of Mount Lassen, being a combination of the Noble Road already mentioned and the old military cutoff from Manzanita Lake to Hat Creek, and over Hat Creek Hill to Poison Lake. Toll bridges and roads had been authorized at various points even in 1865. The road which Kimball sought to avoid was the Red Bluff-Susanville Toll Road via Payne's Creek and Mineral. First records of this road were dated May, 1864. The toll was assessed because Plumas County refused to contribute to the construction cost on the ground that it crossed the county so far north that it had little value to the citizens of the county. W. A. Bofinger, grandfather of L. A. McCoy, was chairman of the Tehama County Board of Supervisors which had the initiative to build the road clear into Susanville. Tolls for sheep or hogs were 10 cents a head, and for cattle 16 cents. Hence Kimball's savings were sizeable. Kimball was just in time to avoid a toll bridge, which the Lassen County Board the following December authorized to be built over "Grease Creek" in the southern end of Surprise Valley.[18]

Perhaps Kimball's complaint also referred to a widespread cutthroat California custom of the day: that of putting collectors out on the roads to gather county taxes on all wagons, herds, and flocks passing by. The *Humboldt Register* (Unionville, Nevada Territory), July 30, 1864, carried an editorial entitled "A Set of Land Pirates in Brass," severely castigating the tax collectors and other officers who "lie in wait for teams passing to and from the Humboldt." Chico, Susanville, and Oroville were all included in the censure.

Camp No. 3, June 9th, 1865. Drove to Jelly's Ferry on the Sacramento River, 11 miles over a very bad road to drive sheep on—day very hot—country very dry, no water or shade most of the way—red land with very little grass—Camped at the Ferry and the Boys rob[b]ed the Hen House of all the eggs, then bought 1 Doz. of the Landlady to make out our supper.

● Jelly Ferry was located on the Sacramento River about ten miles north of Red Bluff, but the curves in the river and the high banks part of the way required the extra mileage Kimball declared necessary to reach the ferry. The boat itself was operated by the force of the current, with lines from the bow and stern attached to pulleys which rolled along a cable stretched across the stream. To reach the east bank, for example, the cable was shortened on the eastern end of the boat (neither end deserved the name of bow or stern), and lengthened on the western end. Naturally the speed was only a fraction of the speed of the current. Frank Jelly, now the senior member of the family for whom the ferry was named, still lives in the same vicinity.

Camp No. 4, June 10th, 1865. Drove to "Old Man" Love's on Battle Creek, 6 miles, (they call

[17] McCoy wrote, April 21, 1953, that Hiram A. and Cyrus Rawson left Missouri May 6, 1857, with 7,000 head of high-grade sheep, and arrived in Tehama County, California, that fall with 4,000 good sheep. In the fall of 1858, Hiram returned to Missouri, and in partnership with G. W. Grayson, drove 8,000 head back, leaving in May and arriving in October. Grayson purchased a half interest in the Rawson Brothers' Tehama County ranch in 1860, and sold it back in 1867. Grayson then drove a large band to Idaho.

[18] "Grease Creek" was probably Wood Creek, modern Bare Creek.

it—I call it 100), road very bad, rocky. Country looks as if it had been burned over. No grass or water on road today, very hot—and while sheep were resting at noon I rode 2½ miles and filled Canteens for boys, all very thirsty. Poor camping place, in sight of Major Redding's due west.[19] Lost 3 sheep today. Loaded up all of our guns tonight for first time.

● Apparently Kimball crossed the River at Jelly's Ferry the morning of the 10th. Probably 15 to 18 trips were required and the sun was high before he could start travelling. The sheep were naturally nervous and 6 miles represented a sizable drive under the adverse conditions.

Frank Reager reports that Alexander Love filed a squatter's claim on the northeast quarter of Section 10, T29N, R3W, in 1852, which was recognized by the federal government in 1866. Apparently the claim was bounded on the west by the Sacramento River. Frank Jelly, in an interview with L. A. McCoy, recalled the ranch as lying south of Battle Creek, extending a half-mile east from the River to the point where the modern highway bridge spans the Creek. In her *History of Shasta County*, Rosine A. Giles reports that Alexander Love had a water-power flour mill and store where the Red Bluff-Millville stage road crossed the Creek. Land titles on the east side of the River were badly muddled. F. S. Reager writes that, "A grant of five leagues was made to William Benitz, July 2, 1849, by Governor Michelorena. Benitz filed a claim before the Land Commission in 1853. This was rejected on September 26, 1854; confirmed before the District Court April 7, 1856; decision later reversed before the Supreme Court and remanded with instructions to dismiss the case. The claim was for five leagues only but, as it was never surveyed, title was clouded to all lands on the east side of the River until the claim was rejected." Thus Love and various other good citizens were "squatters" without title until the mid-1860's.

Miss Giles states that Battle Creek was originally called Nozi Creek, from a tribe of Indians living on the island at the juncture of the Creek with the Sacramento. In 1846, General Fremont, Kit Carson, and a company of U.S. soldiers, fought and exterminated the tribe. Thereafter the stream was known as "Battle Creek," and the island as "Bloody Island."

Major Pierson (sometimes rendered Peter) Barton Reading reached California in 1841. The next year he secured a land grant on the Sacramento stretching six leagues along the west bank of the River, and one league deep from east to west. He stocked the land with cattle in 1845, but the Indians ran them off. Two years later he restored his herd, established his famous ranch home on the west bank of the River above Bloody Island, and became one of the great founders of northern California. In 1848 he discovered gold on Clear Creek, and soon after took $80,000 worth of the metal out of Reading's Bar (Horsetown), some twenty miles northwest of his ranch. A visitor in the early 1860's said there were so many buildings at his headquarters that one could almost mistake it for a town.[20] For a short time during 1849 Major Reading's Rancho San Buenaventura provided the site for the county seat before Shasta was officially selected.

Camp No. 5, June 11th, 1865. Sunday—Was obliged to drive. Made 14 miles, drove until sundown and had to camp on top of a Pine Ridge where there was no water—sheep have had none today. Could see Shasta[21] and "Horsetown".[22]

[19] Considerable confusion exists over the spelling of Major Reading's name. When the town of that name was founded thirty miles north of Red Bluff, it was named for the Major, but the Southern Pacific Railroad later insisted that it be named for its land agent, B. B. Redding. After some years in which both spellings were used, the U. S. Postal Service consented to the latter spelling to avoid confusion. (Information from Frank S. Reager).

[20] Rosina A. Giles, *History of Shasta County* (Oakland, 1949), 258.

[21] The old town of Shasta, first christened Reading's Springs, was located about a mile west, and a little north, of the northwest corner of Major Reading's original western grant—the six square leagues of El Rancho Buenaventura, which totalled something over 26,000 acres. The modern town of Redding is about four miles east and a fraction of a mile south of the Shasta location.

[22] Horsetown, as reported by Frank S. Reager, was situated about eight miles west-southwest of Redding, on Clear Creek, and was first known as Reading's Bar. The bar was about 50 by 300 feet in extent, and became known as the Clear Creek Diggings. Horsetown itself was originally called One-Horse Town, based on the misfortune of a miner, Nelson Waite, who lost one of his team of horses, just before arriving from Sacramento. He thereupon called it One-Horse Town, and the name took hold. Soon the prefix of "One" was

Very rocky and brushy road, have *walked* most all day and my feet are about used up. This is a God-forsaken country, but raised the best crop of rocks of any place I ever saw. Sent Dick 1½ miles today to fill Canteens. No Grass. Burgess drove on ahead, pitched camp, and tied Horses up to a tree. After dark I took 3 men, all the horses, and the water bucket, went down into a canyon 1½ miles where found water for the horses and packed up enough for supper. All hands are badly used up tonight—hardest day we have had. We are now through the foothills, which I always dread—give me mountains.

● The long hard drive for the day was due to many factors. At the Love headquarters there were two channels in Battle Creek around an island. This made it easier to cross the sheep here than farther upstream where Battle Creek had only a single channel. However, it took considerable time as the sheep had to be coaxed twice to enter the water. The band which Kimball was driving was no doubt raised in the Paskenta area, and had been trailed previously into the mountains west of the Sacramento, so their habit would make it difficult to drive them toward the eastern highlands.

Obviously 1865 was a dry year, and the temperature seems to have been well above normal. To increase the discomfort, Kimball was six weeks later than the time when sheep were normally trailed to summer pasture. Hence McCoy says that under these conditions Kimball was really making "railroad time." Neither Kimball nor Burgess, who drove the wagon, appeared familiar with the route, and both wagon and sheep had to follow the old road over which the 14-mile distance would unquestionably have been required to reach Ash Creek Ridge. This is the "Pine Ridge" to which he refers, and Kimball must have ridden to Ash Creek for water.

The ridge beyond Ash Creek became a source of timber during the logging days just after the turn of the century. Shingletown Butte is the most prominent geographical feature along it, and Kimball's camp was about 5½ miles west and two miles south of modern Shingletown. The site of his camp is on the highest spot on the ridge. L. A. McCoy demonstrated that there is only one site along the old road, suitable for a band of 3700 sheep, from which both Shasta and Horsetown could be seen at the same time.

Camp No. 6, June 12th, 1865. Drove 5 miles to Ash Creek where we camped for the day. First green grass—sheep feeding around the Creek. Buck washing clothes. Burgess and George sleeping. Dick cooking *beans*. Small ranch here, cut green barley for my horse with my butcher knife. I made the lady of this ranch a present today of 2 pounds of candles and a Dutch oven (as I was trying to lighten up our load) for which she reciprocated by selling me 1 Qt. milk for a Bit—was she not a liberal dick?

Camp No. 7, June 13th, 1865. Drove 10 miles to Cold Spring.[23] Camped in beautiful pine grove. Had a very brushy road today and a great deal of fallen timber to drive over. Good water and grass today. Lost one sheep—they are very lame, footsore from running over the rocks. Want to make Deer Flats tomorrow so as to lay over for a day or so to rest the stock. Wrote to the Gen'l. today and gave it to a man passing. Passed 2 sawmills today—looked like home.[24]

● The original road on which Kimball travelled from Ash Creek was abandoned many years ago. It came onto the Noble Road one to one and a half miles west of modern Shingletown. There was a regular battery of springs at the head of a small ravine that led southward into the trees down Shingletown Ridge.

Camp No. 8, June 14th, 1865. Drove 8 miles to Deer Flats.[25] Rested today and took dinner at a small spring. Country is very beautiful, through the finest Pine Timber I have ever seen. It looks

dropped. At the peak of its boom in 1849 it boasted about 400 inhabitants, who lived in a tent-camp.

[23] Cold Spring was three miles east of Shingletown, south of California Highway 44, and on the old trail just east of modern Baldwin Reservoir.

[24] The westernmost of the two mills was built by a Mr. Dry, who operated it in 1865. Later it was sold to a man named Ogburn, and it carried his name during most of its history. (McCoy quotes *Way Back When* by Myrtle McNamar [Cottonwood? California, 1942] for this statement). The other was the Vilas Mill, owned by Marcellus B. Vilas, who came from New York to California in 1859, at the age of 15.

[25] Deer Flat is on Deer Creek, about 1½ miles northwest of modern Viola. It is shown on modern maps as Armstrong, for Thomas Armstrong who owns the property. The road Kimball followed for the next move to Lost Camp ran about a mile north of Viola.

grand—if they only had it in Maine. Rained hard for about 2 hours—good Camping place, splendid grass and water.

● Though there was excellent summer pasturage at Deer Flat when Kimball drove through, it was not so satisfactory earlier each season. By the mid-70's, when sheep began to move regularly through this area, a need for extra feed developed. "Tom" Armstrong had established his ranch headquarters there about the same time, so he built corrals sufficient to handle six bands of sheep. He also cut and sold hay. In *Way Back When*, Myrtle McNamor states that still earlier a man named Smith operated a trading post here—the first place west of Susanville where emigrants on the Noble Road to Shasta City could buy supplies.

Camp No. 9, June 15th, 1865. We are still in camp at Deer Flat to rest our stock. I rode out on the road to Manzannita [sic] Creek about five miles to prospect, found about five miles of Manzannita brush to drive through—very thick, so thick a rabbit cannot get out of the trail. Dick cooking beans. Cool fine day.

● For decades, this patch of manzanita was well known to all trail drivers going north of Mount Lassen. About a mile east of Kimball's Deer Flat camp the manzanita started, and the old road veered off to the southeast to begin the climb over Noble Pass, whose crest was some five miles directly east—six miles by trail. The old road crossed the highway about two fifths of a mile from where it left the creek, and in general ran a half-mile to a mile higher up the slope toward Mount Lassen than does modern Highway 44.

About two and a half miles east-southeast of this crossing, the "Manzanita Chute" commenced. Lyon stated that the first serious attempt to establish a better trail through the brush was made in the mid-seventies. A group of sheepmen forced their saddle horses through the manzanita. They were followed by a bunch of driven horses and these in turn by sheep.[24] The progress was so slow that the sheep ate back the leaves from between the thorns, and during the dry part of the season the woody ends of the branches died. As hundreds of other flocks passed, over the years the chute gradually was "chewed" out until it averaged about forty feet across, with places spreading to eighty. Once the sheep entered the chute, they could not scatter, it was so matted and closely grown. Kimball's remark that a rabbit could not get out of the trail was literally true. The broken rock inside the chute was always hard on the sheep's feet.

Camp No. 10, June 16th, 1865. Drove up the Flat today about two miles, so we can make "Lost Camp" tomorrow. The scenery is delightful up here, can sit and count hundreds of the finest Pines I have ever seen. We are now in sight of "Lawson's Peak"[27] [sic] which is all covered with snow—seven miles up to the summit from here. Nights very cool up here.

● Kimball probably camped near where the old road crosses the modern highway on Manzanita Creek, about a mile northeast of Viola. Viola was the spot where M. B. Vilas built his last mill, taking water from Bailey Creek by ditch, and running it down a dry gulch to Deer Creek. The location became a favorite camp-site on the later trail which traversed Palmer grade into Payne's Creek Valley, passing Dales, Tuscan Buttes, Manton, and joining the Noble Road about three miles west of Deer Flat.[28] The Major could not have moved any distance beyond this site without becoming involved in the manzanita.

Camp No. 11, June 17th, 1865. Drove to Lost Camp, fourteen miles over the very ruffest [sic] road I ever saw. Brush—rocks—and logs cross the roads, had lightning getting through on the summit. About four miles of the brush was full of wild bees, and so thick they nearly eat [sic] us up—could do nothing with our horses, had to tie our handkerchiefs over our horses' ears and send

[24] Interview with late Darwin B. Lyon of Red Bluff, California, during a trip across Payne's Creek Valley, Dales, Manton, and Viola to the Noble Road, May 16, 1951.

[27] Peter Lassen was a Dane who pronounced his name in such a way that most Americans would spell it "Lawson," and many early Californians spelled it as Kimball did.

[28] Tuscan Buttes were low twin peaks about eight miles northeastward from the bridge across the Sacramento at Red Bluff, and were the source of Seven-Mile Creek which flowed westward into the Sacramento. The winter headquarters of L. L. McCoy, famous sheep authority of northern California in the days just succeeding Major Kimball, was located here. It is Mr. McCoy's son, Leo A., who has been of especial assistance in preparing these editorial notes.

them on ahead, could do nothing with them. Bees stung me a great many times, covered our hands with old rags. Never saw anything like it before. They were gathering honey from the flowers. I think I must of [sic] been sweet, as they took hold of me as if they liked me and did not care about letting go. Not much grass, water good.

● Lost Camp lay on Lost Creek about 3¼ miles above its junction with Hat Creek. Highway 89 passes on the north side of the Creek approximately where he must have camped. Gorham Ward, L. A. McCoy, and others think that he must have used the slope north of the house which Green Hall erected late in the 1870's. This house and the meadow near it were destroyed in May, 1914, during an eruption of Mount Lassen. Fifty to sixty feet of snow was heaped on the crater, and the lava flow melted it so rapidly that a perfect torrent of water and mud "turned loose." Stones were rolled along by this bulk so as to convert Lost Camp into a barren boulder wash. All along the path the big trees were scraped and gashed across their southwest base where the moving mass ground passed. Vivid scars remain in 1953, practically four decades later.

The expression "lightning getting through on the summit" may mean a thunderstorm or, as L. A. McCoy points out, may be an old-time State of Maine expression meaning hard work. Gorham C. Ward, namesake of Kimball, confirms this opinion, but neither Philip C. Wentworth of Hiram, Maine, nor John Gould, feature writer for the *Christian Science Monitor* living in Lisbon Falls, Maine, are familiar with the expression. However, Gould says there have been enough "State of Maine" expressions exported to other states to permit the publication of a book on the subject.

The section where the bees were so bad is the section where the Manzanita Chute was developed. The plants must have been in full bloom at the time Kimball passed, and the volume of bloom is so great even today that many beemen take their hives to the mountains at this particular season of the year. Manzanita blossom honey is considered very choice.

Enroute to Lost Camp Kimball turned left off the Noble Road onto the "Military Road" at Manzanita Lake, five to six miles before reaching Lost Camp. The Noble Road continued east to Lost Creek, and turned up it nearly five miles to where it crossed over to Hat Creek. Following down it three miles to Long's, it kept on a good mile further before it turned east past Soap Lake and the Cinder Cone to Butte Lake. From here it followed down Butte Creek five and a half miles, and then turned east an equal distance to Poison Lake. On the east side of the latter it made junction with the Lassen Trail southward to the Sacramento Valley.

Camp No. 12, June 18th, 1865. Drove to Little Hat Creek [Hill] 6 miles, a beautiful little mountain valley with Hat Creek running through it—very good road today. Sunday, had to drive—no water on road today and we did not fill our canteens in the morning, so suffered some for water on the drive. Snow on the tops of all the mountains around us looks grand but wild. We are now getting up among the Hat Creek Indians —shall stand guard nights.[29]

● There is no Little Hat Creek in the vicinity, but there is a very notorious Little Hat Creek Hill, known for the rugged climb over it to avoid crossing Hat Creek. This hill was about due north of the junction of Lost Creek and Hat Creek, between the modern Big Spring Ranger Station and the historic Old Station. The mileage reported from Lost Camp was correct to this hill. Later it was frequently used by trail drivers as a camp-site for their bands. Little Hat Creek Hill was on the west side of the Creek, and the Military Road cutting off from the Noble Road passed up over it.

The road through here was always a problem. In the late 1850's the merchants of Shasta worked the road along Hat Creek for eight miles, apparently building a detour around the hill to obviate crossing it. Before 1860 the federal government had a work crew on the road for the summer. Stages operated across it, and government freight was hauled over it from the Sacramento River to Fort Crook, Fort Klamath, and Granite Creek Station. Civilian freight was also hauled from the river east into Honey Lake Valley and north into Yreka. The detour started at the Big Spring where the Ranger Station is now established, made quite a long swing to the northwest, and then turned north-eastward to cross Hat Creek at the island a little west and south of Old Station. When the railroad reached Redding in 1872, Shasta County built a new road,

[29] The Hat Creek Indians were a sub-tribe of the Pit River group.

and only the stockmen used the old Hat Creek Road. However, based on natural reactions in trailing sheep, it is probable that Kimball went around Little Hat Creek Hill by the later sheepmen's detour.

Camp No. 13, June 19th, 1865. Drove 5 miles to Hat Creek Station. Wild looking place. Signs of Indians. They have been here of late fishing. George and myself rode on to the top of Hat Creek Hill to prospect the road—found a very high and rocky mountain we have to go up. Shall have to pack our load up, as it will be all that the horses can do to get the wagon up—fine grass and water here. Found the graves of two white men killed by the Indians—poor fellows died in a wild and heartless place. Passed over the Devil's half acre today and it is well named—it is about 4 miles of Burnt Rocks, as thick as they can lay on top of each other. His seed must of [sic] taken good root—will write more of it after we drive over tomorrow, if the Indians do not get us tonight. "Bronco" bucked with Dick this morning very hard. No damage done, only made Dick laugh, he stuck her. Sleep tonight with pants and boots on, with "my Henry"[30] in bed, beside of me.

● In 1856–1857 Old Station, which Kimball passed, was the Hat Creek Station of the California Stage Company, but between 1857 and 1859 it was used as a military sub-post, based on Fort Crook, for protection of the emigrant trains against the Pit River Indians. During the Civil War it was not regularly occupied though detachments of soldiers often were based on it for short intervals. At the time that Kimball drove his sheep through it was not occupied.

There was a considerable lava flow to the east of Hat Creek, and in it were located two well-known landmarks—Subway Caves and Devil's Half Acre. The Subway Caves were two of the larger cavities in the lava formed when it was cooling, and ice was preserved in them the year round. Devil's Half Acre contained hundreds of smaller pits into which sheep would fall when travelling through this region. Much delay was caused by searching for the lost and rescuing the injured. There were thousands of fallen trees, which contributed to the slowness of the drive. Cattlemen in their later trips also sustained losses here, though not as numerous.

[30] His Henry rifle.

Camp No. 14, June 20th. Drove 8 miles to a small valley east of Lawson's Butte—came over Devil's ½ Acre. It is about 4 miles of rocks, no soil. About half way over we found where the rocks all came from. It has been volcanic eruption. The mouth, or crater, is a hole about 70 ft. long, 40 ft. wide, and about 20 ft. deep, with a natural bridge over the center about 6 ft. wide—splendidly arched.[31] The face of the country around appears to of [sic] been burnt by an immense fire—'tis truly a great curiosity. Next came Hat Creek Hill, about one mile long and nearly perpendicular; same kind of rocks. The Devil truly was liberal of his rocks, or his sack busted and he spilled what he had. Got sheep up the hill very well as it was early and cool in the morning, and we had strung them out well—broke camp about 4 o'clock this morning. All went back, unloaded the waggon [sic], packed four of the horses with about 150 ℔ each, took that up, came back, then I put a rope to the end of the pole and to the Horn of my saddle, so with "Blackbird's" help the team made it. This is a big barren-looking country, do not know what Providence made it for—think he set fire to it after he got it done, but the fire must of [sic] went out, so now he has no account of it in his books. This little valley [on top of Hat Creek Rim] has some bottom grass but very poor water [swamp]. We dig a hole and let it fill up to cook with. Stock all looking well—weather warm for this altitude. More signs of Indians here, see their signal fires at night. Fine sheep feed all through this Pine country, small bunch grass on sandy soil.

● The "small valley" mentioned as the camp-site was probably Summit Lake, well grown to tules and other marsh grasses, which concealed the surface. In the spring the lake is filled with water which partially evaporates as the season advances, with the coarse grasses making livestock feed for fall.

The "high and rocky mountain," to which Kimball referred on June 19 is now usually called "Hat Creek Rim," and is a very steep acclivity which the modern highway ascends by switchbacks. At one spot there was a stretch of bare rock on a very steep slope, 25 to 30 feet long, which it was impossible to go around. In a later

[31] The "mouth or crater" was apparently water-formed and is the entrance to Subway Cave. The natural bridge is now broken down over the entrance to Subway Cave, but both have been summer tourist features.

period, D. B. Lyon would have a wagon going up the hill every other day for a week or ten days, and getting by this place provided a constant worry. Even with six horses pulling the wagon, the slope was so difficult that seldom more than two of them were on their feet at once. Many drivers took their horses up the bare rock hitched only to their double-trees, and then fastened a long rope or chain back to the wagon to draw it up over the incline.

Most later drivers used the same scheme as Kimball in sending their sheep and dogs directly up the face of the steep slope, but they wound their wagons back and forth across the sharp grade, rejoining their bands at Summit Lake. Kimball does not designate it as a lake, and may have passed southwest of it, although normally this would be a difficult route. More probably, that year the lake was already dry, as it frequently dried up later in the summer than when Kimball was there and, with the growth of grass mentioned, looked more like a swamp. This may explain his need to dig a hole and let it fill for "cooking" water. In other years, by contrast, it was often the Fourth of July before one could get through, since much of the trail over the top lacked drainage. Lyon, who in his younger days worked for Leland Stanford and Joe Cone, said that this particular climb over the rim and the wet country on top was highly hazardous.

Later an alternate route over the rim developed in order that the sheep could avoid Big Hat Creek Hill. It was known as the Baker Cutoff, and left the Noble Road at Twin Bridges. Built in the early 1870's by the sheepmen across Hat Creek just below the mouth of Lost Creek, this crossing was a little over 3½ miles from Lost Camp. It kept above the worst part of Devil's Half Acre, and went over Hat Creek Rim on a steeper but more advantageous slope south of the climb over the Military Road, to a point just northwest of Baker Lake. However, it was never possible to take wagons over the route. The lake and cutoff were probably named for William "Bill" Baker. Baker was first a herder for Sam Gyle whose summer range was in this area above the rim. When Gyle sold his interests to Cone & Ward, Baker continued with them and was a very well known and popular sheepman all over the area.

Camp No. 15, June 21st. Drove 11 miles to lake on the north side of the road, very good grass and water.[32] Took dinner at Butte Creek. No water where the road crosses. Found water one mile up the Creek. Lockhart, with two other men, horseback, passed us today, the first from Honey Lake.[33] Last night the Indians came near our camp. The dogs made a great noise. Burgess and I got up, took our rifles, and lay for them behind the waggon [sic]. The dogs drove them off and we stood guard until daylight. Very cold in the night, but we did not dare build a fire, all slept with our boots on.

● Poison Lake, where Kimball camped, was so named from the effect of the bites of small red spiders which frequented the surface of the water. Those who merely washed their faces and hands were usually bitten enough to produce a red inflammation, but those who bathed developed a red rash all over the body. Evidently the Indians were partially immune, for they used to poke fun at the whites, telling them that the only way they should take a bath was to keep their clothes on. At Poison Lake the Noble Road joined the original Lassen Trail, which came in from the north. The fact that at the point where it crossed Butte Creek there was only a dry bed, is further proof that 1865 was a drouthy year, as it was normally mid-July or later before the water ceased to run. Butte Creek was originally called Black Butte Creek, as it had its source near the "Black Butte" of Mount Lassen, now referred to as the "Cinder Cone." Here Kimball was back on the Noble Road once more.

Camp No. 16, June 22nd. Drove 8 miles to Pine Creek—splendid grass and water. Got to camp about 10 A.M., lay by here the rest of the day. Dick done my washing up. Took bath in the creek, changed clothes, and now feel Bully—had a very good road today. Coyotes thick. Large horse flies also very bad, so bad our horses were wild. Turn them out and they come back. Flies up here are

[32] The lake referred to is Poison Lake.

[33] Most communication from Honey Lake region was toward Chico or the Humboldt, and it is probable that Lockhart was the first from that region that Kimball met. June 21 was late in the season and several others must have preceded Kimball over the road. Sam Lockhart operated a ferry across Pit River near the mouth of Fall River. Army communication, even to Fort Crook, was largely from the Sacramento River, where freight came up by boat, and thence from Fort Reading and Shasta City.

mighty hungry, have to grease our horses all over. This is a splendid large valley surrounded by high mountains, range for 10,000 sheep in summer. Found two more graves. They have to cover them with rocks to keep the coyotes from digging them up. It looks cheerfull [sic] to see a grave, as this tells us that white men have been here before.

● Kimball's camp on Pine Creek is easily identified. The Forest Service now has a station at that point christened Bogard after an early day sheepman of that name. It was one of the favorite summer sheep camps of Joe Cone. There were many springs at the base of Bogard Butte, a little over a mile to the west of the modern camp.

From Poison Lake to a point about four miles beyond his camp on Pine Creek, Kimball was traveling the original Lassen Trail. The present highway from Poison Lake to Susanville follows his route quite closely, except the grading of the new road made it possible to cut off many necessary detours around marshes, rocks, and steep hills, which characterized the early route.

Camp No. 17, June 23rd. Drove ten miles to Bridge Creek. Took dinner and rested half way at a small valley. This is a fine valley and has the purest and coldest water a man ever drank—small creek. Horse flies just come in clouds. I think this the most pleasant camping place we have had, fine pine timbers. Boys cooking supper. Horses run back 2 miles. Flies drove them—had to send for them. Keep one horse always picketed in camp. Found the grave of Nancy Allen today. Some poor emigrant woman—on her way to California.

● The small valley where Kimball nooned is identified by W. A. Moon, former foreman for G. C. McCoy,[34] Bert Williams who worked with James Howell,[35] and L. A. McCoy, as Willow Spring, three-quarters of a mile south and two and a half miles east of Feather Lake. His night camp on Bridge Creek is identified by the same people as being later the "Jim Howell summer camp" on Bridge Creek, near the present-day Bridge Creek Station maintained as a summer camp ground by the U. S. Forest Service for the use of the general public.

Nancy Allen, whom Kimball mentioned, was an orphan, and died at the age of 17 years. Enroute west her parents died of the cholera on the Platte, and her sister, a year older, died on the Humboldt. These facts were given to Leo L. McCoy, father of L. A. McCoy, by a Mrs. Vickers, who came to California with the same emigrant train. The California Society of the Daughters of the American Revolution has replaced the original gravestone which McCoy says read, "Nancy Allen, Died Sept. 29, 1857," and the new stone reads "In memory of Nancy Ann Allen, Age 25 years, died Sept. 29, 1857." The data to confirm which age is correct were not available, nor the correctness of Ann as a middle name. "Nancy" was a popular nickname for Ann the first half of the last century and it seems probable that the name should be written "Nancy" Ann Allen.

Camp No. 18, June 24th. Drove 9 miles to small valley. Last feed we shall get this side of Susanville—good feed and water. Flies not so plenty. This is a very good route for grass and water after you get into the mountains, all the way from Ash Creek. Foothills are lightning—very pleasant weather.

● Kimball's "small valley" in this case was located about a mile north of Susan River and about a half-mile east of the modern Hog Flat reservoir. This was the summer headquarters of A. C. "Bub" Worley, a sheep operator who took over from Pat Cronin about 1900, after the latter had been there a quarter-century. Today it is called Worley Camp or Ranch. Again the term,

[34] G. C. McCoy was an older brother of L. L. McCoy, both of whom came into California just after 1870. Leo McCoy was the real "Nestor" of the modern sheep industry; G. C. McCoy, an older brother, unfortunately died young. He had range over in the section northwest of Susanville, around McCoy Flat, which was named for him, Norvell Flat just west, Hog Flat to the east, and Westwood Junction to the south. He took care of the James M. Howell sheep during the summer, and did some buying and selling of stock sheep. His home like that of Leo L. McCoy was in Red Bluff, and he drove his and the Howell flocks past Mount Lassen to the summer range. For several years he trailed mutton sheep to the mines at Virginia City in Nevada.

[35] James M. Howell came west from Missouri in 1859, and with his brother, T. Newton Howell, took up land near Henleyville on Thomes Creek, a few miles west of the Sacramento. His flocks ranged between Red Bank and Cottonwood Creeks in the north central part of Tehama County. "Newt" Howell trailed flocks eastward into Idaho and Wyoming for many years, their peak movements taking place from 1880 to 1884.

"foothills are lightning." Was there a storm or was it that "State of Maine" expression once more? The hills are a series of small buttes, as near straight up-and-down as one could wish. No doubt he had a hard day.

Camp No. 19, June 25th. Drove 14 miles, one mile beyond Susanville.[36] Drove through the town camped in Sage Brush, our first day [he means he camped in sage brush for the first time]. Great cry of Indians here, they are killing everyone they come to. Expect they will fry us for breakfast some of these mornings. No water nor grass here, turned horses in a pasture, and got water to cook with from a man's well. Things look squally ahead—but hope for the best. Today was the Lord's day, but I had to drive. I went up town in the evening and they tell me there I had better go back, I can never get through. Very bad reports from our route here to Surprise Valley.[37] I admit I don't like to go on much, but dare not say so. Got letter from Sacto [Sacramento] here. This is a small town and a *darn poor one*—Indians ought to come in and kill white men that would live here—it was made for Indians.[38]

[36] When Kimball moved beyond the early settlement at Susanville (named for Susan Roop, daughter of its founder, Isaac N. Roop), he was only 3½ miles from "Toadtown", now Johnsonville, where a grist mill had just been completed. The whole Honey Lake district was considered to be especially favored by Providence, and its crops matured with little labor. Since it was particularly easy to make a living agriculturally, its inhabitants were nicknamed the "Never-Sweats." Some of the more civic-minded in later years considered the name rather inelegant, and with a lilt toward alliteration tried to change the name to "The Lucky Land of Lassen." Its failure was pre-ordained.

[37] Surprise Valley is on the California-Nevada boundary, and nearly reaches the Oregon boundary on the north. The mouth of the Valley is some 70 miles south on the Nevada side. There are three lakes in the Valley—Upper Lake being dry most of the year, Middle Lake which is usually half dry, and Lower Lake which carries some water all of the time. The Warner Range lies on the west side of the Valley and the East Warner Range on the Nevada side. The Warner Range possessed three passes commonly used over the first barrier of the dreaded Sierras, the best known being Lassen (modern Fandango) Pass. The sudden sight of water and grass after the Nevada Desert resulted in the emigrants christening it Surprise Valley.

[38] The residents of the Honey Lake region were rather proud of the Eden-like nature of their land suggested by the name "Never-Sweats," but their neighbors considered it synonymous with "lazy." The *Humboldt Register* (Unionville, Nevada), April 30, 1864, tells of a man who advertised for three able-bodied men. "Where do you come from?" queried the advertiser. "Honey Lake," they replied. "Honey Lake be damned!" snarled the would-be employer, as he turned away. "What do you suppose I want? I want men to *work*!" And he muttered disgustedly under his breath, "Honey Lake!" Kimball seems to have gained a similar impression of the whole community the evening he visited Susanville.

Camp No. 20, June 26th. Drove to Willow Creek, 12 miles through Sage brush and sand, very bad road to drive over. Camped at the lower crossing —poor place—no grass and very poor water. Found alkali very thick—lost 3 sheep. I am sick today, overworked myself—very hot—this is a bad changeable climate.

● There were two crossings of Willow Creek on the trail north of Susan River, the lower crossing being to the south. The alkali conditions were so bad that later drivers adopted a crossing nearly three quarters of a mile north, where feed and water were better and there was less alkali. It would be only natural for sheepmen needing water for their flocks to assume that the best water would be along the river, but the drainage was not too good in the immediate soils and the mineral salts accumulated. A trading post for emigrants was established here in the spring of 1856.

Camp No. 21, June 27th. Drove 5 miles to Soldiers' Crossing, following the Susan River, which is a very small stream running through sagebrush banks, so bold that sheep cannot get down to drink, in but very few places. Very hot. Nothing but sand and sagebrush. Found some grass and poor water. Alkali very thick.

● Soldiers' Crossing, or Soldiers' Bridge as it was more commonly called, was established in 1860. First Lieutenant Hamilton brought a detachment of fifty men from the Presidio of San Francisco and camped in July on the north side of Susan River. He established a military post, and the bridge was built to transport his supplies across the river. The original location of the bridge was between fifteen and sixteen miles east of Susanville, but Kimball could easily have travelled the seventeen miles he reports if he followed close to the River.

Camp No. 22, June 28th. Drove to Shafer's and

camped for dinner, 4 miles. Have now 18 miles to make without water, shall drive part of it tonight and make a dry camp. Saddle train just came in from Surprise Valley, tell me we can never get through, our party is too small.[39] They saw white men's hands, heads, legs, arms, and I know not what else hanging up round in the trees loose. Indians are very bad I expect. One of the passengers just told me we will be mince meat for them Indians. I told him we would be as tough as any they got hold of lately. They kill a man, then cut him up in small pieces and hang him up round on the trees, so white men can see it to scare them. Passengers looked hard. Wrote to the Gen'l. from here. Rolled out at sundown, drove until the moon went down, then made a dry camp. Horses up to close picket, eat dry lunch, and put on guard, went to bed. Made about 7 miles of the 18.

● Shaffer's Station (sometimes spelled Shafer's) was one of the old landmarks on the emigrant road from the Humboldt River. The ranch on which it was located was "filed on" in 1859 by a partnership, George W. Lathrop and Thomas J. Harvey. They may have occupied their claim prior to that date as they had been in that section of California a year or two previously. There were many passersby, enroute to and from the mines on the Humboldt River and near Black Rock mountain in Nevada. Lathrop and Harvey erected the station to give service to this business, including its livestock and rolling stock. In the late summer of 1862, two brothers, U. L. and P. J. Shaffer, bought the ranch, opened a new store, and enlarged the facilities of the station. H. E. Lomas lived on the premises in his own cabin, and operated a blacksmith shop where he could perform the necessary iron work for travellers. By 1863 traffic to the Idaho goldfields had also commenced. The station was located four miles beyond Soldiers' Bridge and a mile and a half north of the River. It is called Mapes today.

Camp No. 23, June 29th. Drove 13 miles to Mud Springs over a very bad rocky road, very hot, and the sheep drove badly. Had to lay over in the middle of the day, so hot, did not get to camp until 10 o'clock at night. Broke camp at daylight this morning drove through Sage, Rocks, Sand, Alkali, and Snakes. Horrid country. No grass.

● Mud Springs, or Mud Flat, was on the Noble Road and, because of its two springs about a half mile apart, was a favorite camp-site for emigrants and other travellers. A trading post was built there in the early 1850's which was sold by Patrick Bagin to Charles B. Clark in February before Major Kimball went through. In addition a regular road station was run for the accommodation of travellers. The names of the surrounding geographical features were symptomatic of the early west. The water from Mud Springs was drained away by Mud Creek, a branch of Dry Creek, which in turn joined Secret Creek. At a slightly higher elevation to the south of the Springs was Bull Flat, and the slope continued up to Skedaddle Creek and Skedaddle Mountain.

Mud Springs Station was more exposed to Indian attack than the stations further west. In December, 1861, Samuel Marriott started for the Humboldt from Honey Lake with four or five wagons drawn by ox-teams. Beyond Mud Flat the wagon train was partially plundered by Indians, so he turned back and unloaded his freight at the Mud Spring Station. Four men stayed there through the winter. Early one morning in March the watch dog caught an Indian raider. The Indian shot him, the bullet traversing the length of the body just under the skin, but the dog held on until one of the four men wounded the brave. He fled to his horse, where other members of his party helped him mount and escape. Five ox-teams were promptly secured from Shaffer's and the goods evacuated. A night or two later the Indians burned the station to the ground. The following spring it was rebuilt, though it suffered several other attacks before Kimball passed through. A party of eleven were attacked in the late fall of 1862 by Indians hidden behind piled sagebrush, and in a long running battle two were killed.

Violence persisted up to the week of Kimball's arrival. On June 22, some employees of the firm

[39] Kimball refers frequently to the Saddle Train, e.g., see the journal entries for June 30, July 29, and July 30. Early in the spring of 1865, the firm of Pierce and Francis, backed by General John Bidwell, started operating a weekly saddle train from Chico to Ruby City. The first train left Chico on April 3 of that year, under the command of the senior member of the firm, Captain Francis, an old-timer among the Pacific slope mountains. The fare, aboard the "hurricane deck" of a mule was $66, which included the use of a roll of blankets and the transportation of the passenger's provisions. Forty men made the first trip and the scheduled time was sixteen days.

of Pierce & Francis, preparing for the initial run of the Idaho stageline, had gone east from Mud Springs Station to work on the road near Granite Creek. Three days later Charles Barnhart, a member of the party, shot and killed William Rogan, a fellow worker. The thirty civilians and ten soldiers present formed a court, tried Barnhart, and condemned him to death in an hour. Asked if he had any particular request before dying, he said he wished them all to stand in front of him, so he could "take a good look at them," hoping by this act of bravado to obtain a change of sentence. But no one weakened, and the record shows that he "left immediately afterwards." Both murdered and murderer were buried in the same grave.

Camp No. 24, June 30th. Drove 6 miles to Rush Creek—some grass and poor water. Here we found two ox-teams waiting for company. We are their men—now our company is six white men. Indians reported very bad ahead. Shall roll out in the morning and take chances—hope all will go well—we are well armed but our company is small. We are now in the state of Nevada.[40] Just received the news that the Indians have captured the Red Bluff saddle train, took all the stock, the men got off—they were camped in a very bad place in a canyon. It has rained some today.

● The water at the Rush Creek camp was even more alkaline than that at Willow Creek, and more poisonous. Improvements in the drainage down Rush Creek have minimized this difficulty in recent years. The cutoff through the Madeline Plains adopted by the trail drivers in the later 1870's enabled them to avoid both Willow and Rush Creeks.

In the early 1860's there was a boundary line conflict between Nevada and California, in which the whole area from the Oregon line to the Arizona boundary was in dispute. Early maps had been conflicting, so a survey was started north from Lake Bigler (Tahoe) in 1864, and had just been completed in the fall before Kimball made his drive. Previous to that time most people of the area (Roop County, Nevada, supposedly) assumed that everything from the eastern slopes of Mount Lassen, including Susanville, and Honey Lake, was inside Nevada.

Camp No. 25, July 1st, 1865. Drove to Smoke Creek Crossing, [following] the creek up through a rough canyon of 4 miles, making 9 miles over a very rough rocky road, and through the wildest country I have seen.[41] Bully chance for the Indians to take white men in. I just think that a white man has no business out here—found two more men here waiting for us. Now we feel as if we can make a very good fight for *plugs*—rained today with *very heavy thunder and sharp chain lightning*. Do not know *what* Providence can send after us next. Sheep began to die today, lay it to the *alkali* water at Rush Creek—have camped at the mouth of a large canyon we have to go through tomorrow. I now ride ahead of the train most of the time to look out for "Si-wash-es." Put on double guard tonight.

● The 4-mile canyon to which Kimball refers is a rocky gorge with perpendicular walls, almost impassable for wheeled vehicles today. Most of the way it is hardly wide enough for two wagons to pass, and the rocks in the creek bottom were devastating to wagon wheels dried out by crossing the desert.

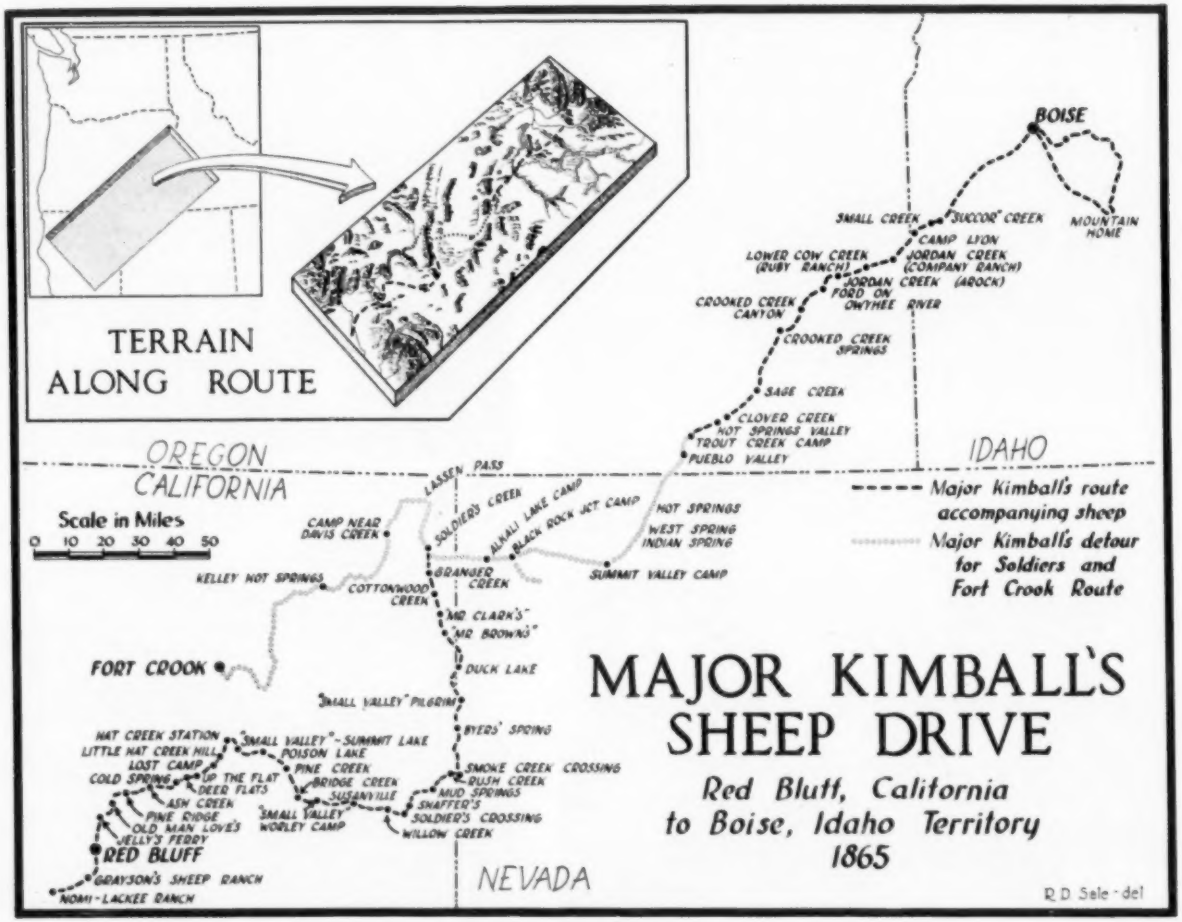
Smoke Creek Station was well known between 1860 and 1867. In April, 1860, Strong, Breed & Co., erected a station or hotel for the accommodation of travellers. The next year J. H. Breed, brother of one of the partners, bought out the station, but that fall the Government took it over as an army post. Here in the spring of 1862 William V. Kingsbury established a trading post and soon opened a new station to travellers. Two seasons after Kimball camped there, Kingsbury advertised it as the "Celebrated Smoke Creek Station, situated on the Humboldt, Idaho, East Bannock, Reese River, Salt Lake, Surprise Valley, New York, London, Paris, Japan, and China road . . . from which point you can go anywhere, *if you want to*."

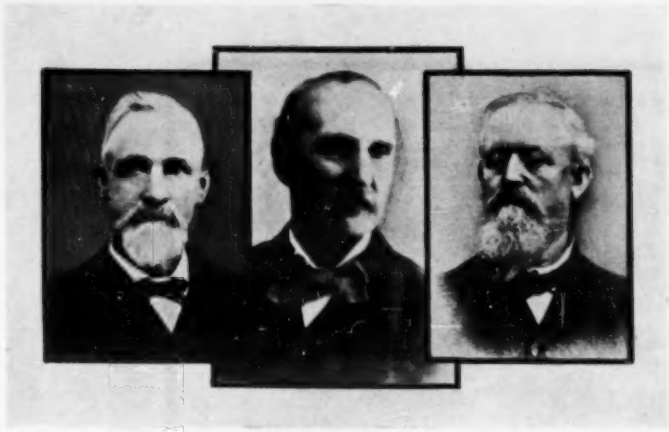
A few soldiers were stationed at Smoke Creek in the spring of 1862, and a much larger force a year later. Smoke Creek was made a permanent military post in July, 1865, and troops were held there through August, 1866.[42] Some stones and

[40] Kimball actually left California about three miles from his camp on Rush Creek.

[41] At Smoke Creek Crossing, the Humboldt and Idaho routes into northern California joined.

[42] Richard G. Wood, War Records Branch, National Archives and Records Service, in a letter dated November 21, 1952 states that no post returns exist, but that the post was abandoned in accordance with provisions of General Orders No. 21. Headquarters, Military Division of the Pacific, August 9, 1866.


TERRAIN ALONG ROUTE
BOISE
SMALL CREEK
"SUCCOR" CREEK
MOUNTAIN HOME
CAMP LYON
LOWER COW CREEK (RUBY RANCH)
JORDAN CREEK (COMPANY RANCH)
JORDAN CREEK (ABOCK)
FORD ON OWYHEE RIVER
CROOKED CREEK CANYON
CROOKED CREEK SPRINGS
SAGE CREEK
CLOVER CREEK
HOT SPRINGS VALLEY
TROUT CREEK CAMP
PUEBLO VALLEY
OREGON
CALIFORNIA
IDAHO
LASSEN PASS
Scale in Miles
0 10 20 30 40 50
CAMP NEAR DAVIS CREEK
SOLDIERS CREEK
ALKALI LAKE CAMP
BLACK ROCK JCT. CAMP
HOT SPRINGS
WEST SPRING
INDIAN SPRING
SUMMIT VALLEY CAMP
KELLEY HOT SPRINGS
COTTONWOOD CREEK
GRANGER CREEK
"MR CLARK'S"
"MR BROWN'S"
FORT CROOK
DUCK LAKE
"SMALL VALLEY" PILGRIM
BYERS' SPRING
HAT CREEK STATION
LITTLE HAT CREEK HILL
LOST CAMP
COLD SPRING
"SMALL VALLEY" - SUMMIT LAKE
POISON LAKE
PINE CREEK
BRIDGE CREEK
SUSANVILLE
UP THE FLAT
DEER FLATS
ASH CREEK
PINE RIDGE
OLD MAN LOVE'S
JELLY'S FERRY
"SMALL VALLEY" WORLEY CAMP
SMOKE CREEK CROSSING
RUSH CREEK
MUD SPRINGS
SHAFFER'S
SOLDIER'S CROSSING
WILLOW CREEK
RED BLUFF
GRAYSON'S SHEEP RANCH
NOMI-LACKEE RANCH
NEVADA
Major Kimball's route accompanying sheep
Major Kimball's detour for Soldiers and Fort Crook Route
MAJOR KIMBALL'S SHEEP DRIVE
Red Bluff, California to Boise, Idaho Territory 1865
R.D. Sele - del



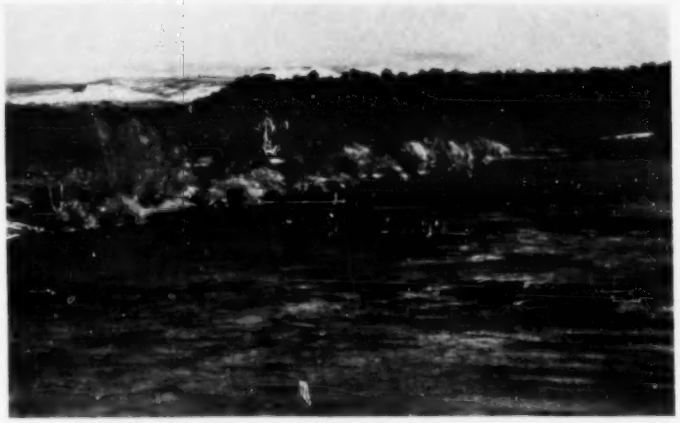


FIGURE 1. Gorham Gates Kimball (center), George Hoag (left), and John W. Burgess (right); all photographed in their later years in Red Bluff, California. *Courtesy L. A. McCoy.*

FIGURE 2. Site of headquarters, old Nomi-Lackee Indian Reservation, where Kimball gathered the sheep for the drive. Excavations indicate eight buildings were located here. View toward west-northwest.

FIGURE 3. Ferry boat crossing to east bank of Sacramento River from Jelly's Ferry, around turn of century. *Courtesy L. A. McCoy.*

FIGURE 4. "Pine Ridge" where Kimball camped June 11. Note rocks and light grass to which he referred. From the higher slopes he could see both Shasta City and "Horsetown." *Courtesy L. A. McCoy.*

and "Horsetown." *Courtesy L. A. McCoy.*

OLD STATION
SITE OF HAT CREEK STATION
CALIFORNIA STAGE COMPANY
TEMPORARY MILITARY POST
AFTER THE WITHDRAWAL OF U.S.
TROOPS THE "HAT CREEK STATION"
WAS REFERRED TO AS "OLD STATION"

FIGURE 5. Cold Spring Camp, Kimball's first overnight stop on the Noble Road. Dark foliage in foreground growing from spring—sheep probably bedded down between shed and pines.

FIGURE 6. "Manzanita Chute" leading slightly north of east from Noble Pass. Chute had not been "chewed out" when Kimball crossed here June 17, 1865, but the thorny brush along the sides is still so thick "a rabbit cannot get out of the trail."

FIGURE 7. Headquarters at Lost Camp on Lost Creek before lava flow of 1914 destroyed the camp site. This was Kimball's Camp No. 11, June 17, 1865. *Courtesy Gorham C. Ward.*

FIGURE 8. Darwin B. Lyon (left), veteran Red Bluff cattle and sheep man now deceased, and editor, at marker for Hat Creek Station, May 16, 1951.

FIGURE 9. Rough country in Devil's Half Acre—lava rock, pits in ground, and "down" trees made crossing difficult. Kimball crossed June 20, 1865.
FIGURE 10. Poison Lake, where Kimball camped June 21, 1865, as seen in May, 1951
FIGURE 11. Nancy Allen grave at Bridge Creek, Kimball's Camp 17, June 23, 1865. (lettering retouched)
FIGURE 12. "Worley Camp"—the "small valley" where Kimball camped June 24

FIGURE 13. Mud Flat, Kimball's camp of June 29, 1865. The water in the foreground issues from the western-most of the two springs at the flat. The old emigrant station was at the eastern spring. Bull Flat lies in the center distance above the ridge, and the Skedaddle Mountains are in the background.

FIGURE 14. Western entrance to the "rough canyon" through which Kimball traveled four miles on July 1, 1865. The saddle train route and the emigrant wagons passed through this canyon.

FIGURE 15. Ford at Smoke Creek Crossing. Kimball's Camp 25 was in this vicinity on July 1, 1865. The old emigrant station was on the level spot behind the sagebrush in the upper central part of the picture.

FIGURE 16. "Bare Cabin" which Kimball passed the noon of July 5, 1865. Here he gathered the flour which the Indians had thrown on the floor after murdering two white settlers the week before.

FIGURE 17. Camp 29 on Barber Creek, July 5, 1865. Site of "Mr. Brown's."

FIGURE 18. Eagle Creek, looking east and slightly north toward Middle Lake in Surprise Valley. Camp No. 30 was on this creek July 6, 1865, at "Mr. Clark's" from Maine.

FIGURE 19. Camp 31 for Kimball was on Cottonwood Creek on July 7, 1865. The Warner Mountains are in the background—the west wall of Surprise Valley.

FIGURE 20. Pueblo Valley, Oregon, looking north. Trout Creek Ranch headquarters, where Kimball apparently caught up with his sheep, July 23, 1865, are on the right, in the distance. (Note light reflection from windmill).

FIGURE 21. Clover Creek Camp of July 25, 1865. Now called Willow Creek. More sage has come here since Kimball's day, but the grass is still excellent.

FIGURE 22. Crooked Creek, flowing slightly north of east from Crooked Creek Springs (camp of July 27, No. 47) looking toward Tudor Ranch headquarters (now Stoddart Brothers), extreme right. Passed down this valley from camps 47 and 48.

FIGURE 23. Camp 49, of July 29, 1865, on Crooked Creek, looking north from highway U.S. 95, and Crooked Creek Spring is 15 miles downstream from the Springs where he previously camped. There are sharp canyon walls here, as he describes, and the grass was best here, although there were spots on the northeast bank of the creek where the sheep might have bedded down.

FIGURE 24. The Owyhee Canyon, with one of the "Castle Rocks" which Kimball describes. The ford where Kimball swam his sheep across the river led to the trees, and his next day's drive, July 31, 1865, followed up the canyon to the right of the "Castle Rock," and onto the high mesa in the background.

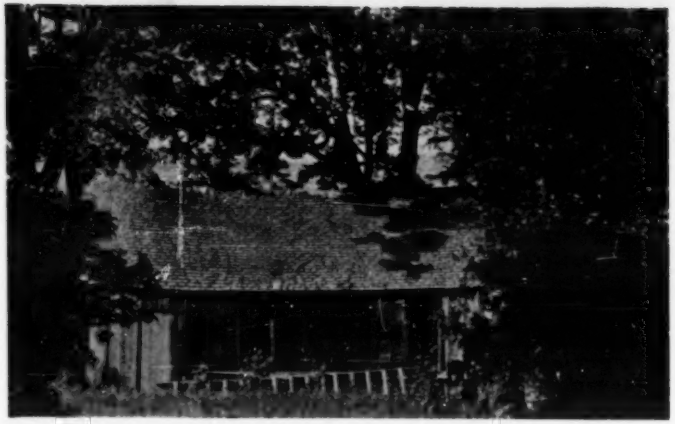


FIGURE 25. The first house that Kimball saw after leaving Surprise Valley, at the ford across the Owyhee. Known as "Duncan's" it was the site of the stage stop at the ferry. The stone part of the original house has been removed and replaced by wooden construction.

FIGURE 26. Old fort on Ruby Ranch, a half mile west of Danner, Oregon, and just east of Lower Cow Creek where it enters Jordan Creek. After Kimball's day, this became a station on the stage route between Winnemucca and Silver City. *Courtesy W.S. Skinner.*

FIGURE 27. Looking northeasterly from Kimball's Camp 53 of August 2, 1865. This is the valley of Hooker Creek, and cuts off to the left from the road to Ruby and Silver City. Camp Lyon lay between the two distant ridges directly over the short post in the center of the picture.

FIGURE 28. Site of Camp Lyon, Kimball's camp from August 3 to 8. When he started for Boise, he passed the right of the flat-topped mountain in the left center of the picture.

timbers from the foundations of the old buildings were still there in May, 1952, when the editor visited the place.

Camp No. 26, July 2d. Drove 14 miles up through a very rough canyon of 5 miles, thence over rocky ridges and through small sagebrush valleys to "Byers Spring," where we camped. The party that have [sic] joined us would like to go faster but dare not leave us, so shall drive as fast as possible and not hurt our stock. They are good fellows, help us drive all day. I shot an antelope today. Sheep dieing [sic] fast, lost 20 today—lay it to the *alkali*. Camped early, put out our fires, and stood guard of 2 men—myself and Cook, a cattleman, on guard tonight. Horses all up under close picket—*lovely country this, for "Hattie's darling" to be in.*

● When he left Smoke Creek Station, Kimball turned north off the Noble Road, over the new saddle train route to the Idaho mines. The rough canyon through which he drove was probably Chimney Canyon, where a small stream flows in wet weather, that empties into Smoke Creek. Byers' Spring was over a small divide to the north and may have fed one of the branches of Buffalo Creek, as there were two or three spots where the water came to the surface. The main spring was cleaned and the livestock fenced not many years ago, but for the last four decades the surplus water has been run into watering troughs. The chief spring was named for James D. Byers, who was prominent in the early history of this region. From 1856 to 1858 he was sheriff of Plumas County, and in the latter year bought a ranch near Janesville, west of Honey Lake and southeast of Susanville, where he raised cattle and horses until his death in 1902. After the Indian troubles were settled, he grazed his herds on the Madeline Plains over as far as Byers' Spring.

L. A. McCoy says that when he was a young man Byers, or his estate, ran cattle at the north end of Eagle Lake. His brand was typical of a cattleman that was an individualist as well. It consisted of the three letters in capitals, J I M, so enormous that they spread from the shoulder to the hip.

Byers was deputy sheriff of Plumas County, California, during the "Sagebrush War" over the Nevada-California boundary. He showed considerable sympathy with those who represented Roop County, Nevada, and his good sense restrained some of the hotheads and saved many lives. Byers was one of the delegates to the meeting when the new county was established and proposed and carried through the naming of it for Peter Lassen, even though there was strong sentiment to continue the name of Roop. Still later he served as general superintendent of the California and Idaho Stage and Fast Freight Line. Since this route passed the spring, some believe that his name was given to it at that time, but he did not serve in this capacity until 1866. This was a year after Kimball's trip, when the spring was already named.

Camp No. 27, July 3d. Drove up through canyon 4 miles long, crossing over "Madalean" plains, finding good grass and water, thence up through canyon of 3 miles which was very rockey [sic] or very muddy. Some good cedar in the rocks, first trees we have seen since we left the Sierras. Fine place for Indians to kill us by shooting down upon us from the tops of the rocks. I tell the boys they could roll rocks enough down to kill us, so we hurry through such places and keep a good lookout. Have made 13 miles where we are in camp at a Small Valley. Had a heavy thunder shower with chain lightning today. Sheep still dieing [sic], lost 14 today. Our Horses are [ate] some alkali. Very good grass here and water—am well worn out, loss of sheep and anxiety. Cook says tomorrow is Fourth of July and asked me if I am going to celebrate. I told him yes, I was going to have some Guns fired. We have not alowed [sic] any fireing [sic] up to now.

● Kimball actually crossed "Painter Flat," which was separated by a low ridge eastward from the Madeline Plains. The latter became quite important in later sheep drives, as the trail drivers could save a good many miles and miss much of the unpleasant country through which Kimball passed after leaving his Camp No. 17, at Worley Ranch, June 23. From Butte Creek and Poison Lake they continued east through Gray's Valley, Windy Hollow, Harvey Valley, Champ's Flat, the south end of Grasshopper Valley, and then over a low ridge with a peculiar deeply notched crest at one point, into Dry Valley, which was separated from the Madeline Plains by another low ridge. The Madeline Plains themselves were L-shaped, with the upright bar of the L extending up north beyond the modern town of Madeline and south to a point below Termo, the total

distance being about 25 to 28 miles. The horizontal bar of the L extended east from the low ridge west of Termo to Cold Spring and Red Rock creeks, turning slightly north around the edge of the hills to reach over into Nevada. This east-west distance is about 25 miles.

The rough, rocky canyon three miles long was just as bad as Kimball described. At several points the stream-bed was little wider than the spread of the wagon wheels. The water-rolled rocks varied from the size of a man's fist to the size of his head, and were so smooth and round as to make the footing for both riding and draft horses very uncertain. There are several points in the canyon where the Indians could find hidden perches, almost directly above the passing men, wagon, and sheep.

The "small valley" where Kimball camped is a beautiful spot, now called "Pilgrim," on the old emigrant trail from the Humboldt to Oregon. Ruts from the old route are well dispersed over the valley, though a dam to create a "stock-water" reservoir has submerged some of the lowest levels. Grass has the "jump" on the sage-brush and there is nothing to indicate that this was not true in Kimball's day. The editor and Biller had a thrilling trip with Lyle Cook over the old trail, working backward along the Kimball route from the "small valley" to Byer's Spring.

Camp No. 28, July 4th. Drove 4 miles to Express Springs, crossing the summit, took lunch, then drove 5 miles to "Tulle Dad" [Tuledad] Spring where we took dinner. Plenty of water and grass. Thence to Duck Lake through a very rockey [sic] canyon, and over the worst road we have had, making 16 miles today. Had heavy rain with sharp thunder and lightning. This was the *gayest* 4th of July I have ever passed. I shot off my rifle a number of times—see no Indians, which is a very bad sign. Road so rockey broke our waggon today. We have 20 miles now without water—today passed about 20 men with their families moving out of Surprise [Valley] in fear of Indians. They say the Indians killed two men 7 days ago right where we go into the Valley. This is a hard road to travel—if "Jordan" is as bad I have no desire to start for the other side.

● The difficulty of the road even defeated the Jeep. Rocks, mud holes, impassable ruts, even more impassable water courses, and a timetable for investigation bowled us over. The summit of the mountain above Express Springs is square, looking from a distance, and is table-topped.

Tuledad Spring on the west bank of Express Creek is directly below the mountain divide Kimball crossed. In the *Surprise Valley Journal* (Cedarville, California), June 11, 1953, Irving Groves writes of the old Indian Fighter, known as "Tuledad," who lived to be 104 years old and who gave his nickname to the spring and the canyon between Duck Lake and Red Rock (the latter in the Madeline Plains). His real name was Samuel K. Matney, and he was born in 1783 in a log cabin located on land now a part of Nashville, Tennessee. His mother died at birth, but his uncle raised him on the real frontiers of America in Ohio and Illinois. He participated in the War with Mexico, as a private in Company C, 3d Illinois Volunteers, although at 63 he was so old he had to falsify his age. In 1849 he joined the Gold Rush, served as a scout on the Arizona plains as well as in the Modoc Indian war in the Lava Beds. He also farmed near Sacramento where he raised hogs in the tules and sold bacon, ham, and "side meat" to the miners. In the 1860's he came to Surprise Valley and took up a claim near the north end of Middle Lake. Later he sold this property and moved over near Pressley Dorris, west of the Warner Mountains and near the mouth of Pine Creek. He is reputed to have served with Major S. P. Smith of the Second California Cavalry, and killed and scalped Smoke Creek Sam, near the northeast corner of Washoe County, Nevada, when Smith's command wiped out Sam's Piute band on February 15, 1866. It took fourteen wounds and a "scalping" to finish Smoke Creek Sam.

The rocky canyon through which Kimball reached Duck Lake is in the Coppersmith Range. It lies almost directly west of Duck Lake, and the land between the mouth of the canyon and the lake is high. It is usually difficult to get near the lake because of the swampy edges, but because of the dryness of the season in 1865 Kimball was probably able to camp near the water and supply his animals.

Camp No. 29, July 5th. Drove 12 miles into the south end of Surprise Valley, took dinner, and lay over one hour at the house where the Indians had killed the two men. House deserted and things looked like they had a grand "pow-wow" here. We gathered up a sack of flour the Indians had poured

upon the ground to get the sacks for clothing. Stood guard all the time here. Dare not stop here tonight so shall drive in about 5 miles. Sheep looking better, lost none today. This is a fine valley about 65 miles long by 20 wide, with 3 large lakes and [one] said to be 15 miles long. Good soil and the best watered valley I have ever seen. Drove up the valley 6 miles to Mr. Brown's Ranch where we camped for the night. Road runs close to the base of the mountains on the west side, where there are numberless hot, cold, and warm springs running from the hillside. Families are all leaving the valley.

● The cabin where the two whites were massacred by the Indians belonged to Thomas Bare (or Bear), and the place is still known as the Bare Ranch. In badly run-down condition, the old log building remains there, just a few feet off Bare Creek—the whole today being the property of Nolen, Murchis & Keefer.

The victims were George Shortridge and a settler named Bissell, who came from farther north in the valley at Lake City. They had been to Susanville for flour, and that night camped outside Bare's cabin. Apparently the Indians ambushed them while they slept. Shortridge was scalped. The raiding party took six horses and all the supplies they could find, except the flour which Kimball scooped up. Some suspicion was aroused that the killing was done by white men disguised as Indians, a natural reaction on a panic stricken frontier, but no proof of the latter was ever advanced.

Thomas Bare and A. W. Worm were keeping the trading post at Deep Hole Springs, the second station to the east of the Smoke Creek Station on the Humboldt River route, opened in 1856 by Ladue Vary.

Bare's cabin was built at the foot of Surprise Valley on what was called Wood Creek in the summer of 1864. Because of a drouth in the winter of 1863–64, livestock were dying off in the Sacramento Valley and many owners were offering half of their surviving animals to bold souls who would take them into watered grassy areas in the mountains. Many settlers attempted this in Surprise Valley, and one explanation of how Byer's Spring got its name is that Byer may have handled some stock in that region in 1864 under this arrangement.

Brown's ranch was obviously on Cherry (or Barber) Creek, and the old farmstead still stands near the state highway, which rather closely follows the pioneer road at this point.

Camp No. 30, July 6th. Drove 6 miles to Mr. Clark's Ranch (one of the men that came with us with an ox-team) where we camped for the day—good grass and water. Mr. C. has a beautiful Ranch for this valley. Our Company all left us this morning as they live here in the valley and we feel safe now until we leave this valley. Mr. Clark is a Maine man and used to work for Ruel Williams running logs. Says he used to know the Gen'l. He appears to be a fine man and we were well treated while at his house.

● The water which Kimball found must have been in Eagle Creek, as the distance travelled fits this location only. Apparently he camped below the modern highway, and there are evidences of two or three old-time farms, although it was impossible for Lyle Cook to identify any of them as Mr. Clark's.

Camp No. 31, July 7th. Drove 3 miles, found a Ranch the family had left, took dinner, then drove on to Cottonwood Creek, 5 miles. Camped for the night. Good grass. We are now back in California, Siskiyou Co. Coyotes got among our sheep in the night—all hands turned out after them.

● Cottonwood Creek flows eastward from the Warner Mountains into Middle Lake of Surprise Valley. Kimball had actually been back in California since he was two miles east of Thomas Bare's cabin, but no one knew exactly where the line was located. This is the first mention of losses from predatory animals, although he must have encountered others along the road. On June 22 he commented that the coyotes were thick.

Camp No. 32, July 8th. Drove to blacksmith shop 8 miles where we had our wagon repaired. Camped in the new Fort the settlers have just built to put the women and children in. It is made of logs very strongly laid up, and the roof covered with dirt so they cannot fire it—port holes from all sides, also a high log fence round the outside. Think they can stand the Indians a heavy fight from this fort if they undertake to drive the settlers from the valley. Found a man here I knew in Carson City, Nevada Territory—he says I must not think of leaving the valley, as the

Indians will kill us the first night out—nothing like keeping up your nerv [sic].

● The blacksmith shop was probably on Granger Creek, on the main road south of Cedarville. The fort was quite evidently in the same location.

Camp No. 33, July 9th. Drove 10 miles to Soldier's Creek today, and stoped [sic] and took dinner at Cedar Creek where we found a ranch deserted with a good garden, from which we got a square meal of Turnepts, Raddishes, and Lettice [sic]. Fine bunch grass. Coyotes thick—Indians seen in the Valley today. Things look very blue. No soldiers arrived here yet, and the settlers say they are not coming—but I know better.

● Cedar Creek, where Kimball ate lunch, runs through modern Cedarville, and the ranch to which he refers was evidently a precursor of the city. Cedar Creek is fully three miles north of Granger Creek, and Soldier's Creek approximately six and a half miles beyond. Probably he camped lower down the slope than the modern highway location, especially since his flock remained at Soldier's Creek for several days.

Camp No. 34, July 10th. In camp at Soldier's Creek where we will recruit our stock and wait for some company to go on with us. Indians came into the Valley today and run out 16 head of Cook's cattle. Never saw so frightened a set as the settlers here are.

July 11th. Still in camp. Settlers got together today, put all their stock together, herd it all day, and corral it at night with men to sleep in the corral. I told them that Capt. Starr was coming sure, but if they would furnish me with 5 good men and a fresh Horse I would go to Fort Crook 140 miles and see what could be done—they are now making up the party. The Indians came in today but got no stock.

● Fort Crook was built by Captain J. W. T. Gardiner on Fall River, about six miles above its junction with the Pit River, at approximately the site of modern Glenburn, California. It was first occupied July 1, 1857, and garrisoned constantly until May, 1866, when the troops were withdrawn. Captain Starr was a very active Indian campaigner and participated in the fight in Guano Valley in the northeastern corner of Washoe County, Nevada, at the end of March, 1866. There he and Major Henry B. Mellen with ten men of Company F, Second Cavalry, California Volunteers, joined Company D of the same regiment under Major S. P. Smith, commandant at the Smoke Creek Station, and wiped out the notorious band of Piute renegades led by Smoke Creek Sam.

July 12th. Left for Fort Crook with 5 men, rode about 40 miles passing through Bear Valley and round the south end of Goose Lake. Camped in an open plain where we could see all around us, eat our *Grub*—which was *Bread, raw Bacon*, and *Sugar*. We had put up for us just what each man could carry in his "Canteenur," tied our [horses] to close picket, stood guard of 1 man every 4 hours.

July 13th. Broke camp at daylight. About noon we saw some grass that looked fine ahead of us, and said we would ride to it and let our horses graze about an hour—this was on "Pitt" river [at the head]. Just before we got to the grass I saw 8 Indians get up. Boys all looked at them and we was planing [sic] for a fight. They came right for us as fast as they could—one wild Irishman that was along says, "Let's blaze away, be Jasus, boys," when the Indians were 1,000 yards off. I says, "No you don't (his old gun could not reach half-way)—let them come nearer and we won't shoot unless we have to, for there is lots of them here on this river fishing." So we let them come up within about 200 yards and I pulled up "my Henry" and told them to stop. We all got ready, and I see they had no Guns, but all had Bows and had them strung. I told the boys I did not think they wanted to fight, as we could see them all striking on their breasts, so we concluded to let them come nearer. I told them to come up and they sent 4 to us—and all they could say was "Tobacco—Tobacco—Tobacco. No Piute." I gave them some tobacco—and asked them where they had camped. They said "Wake up" [Wickie-up] and pointed up the river and made signs with their fingers as if there were lots of them. I told them to go and they started off. We did not move until they were out of range, then we rode on and we found the grass full of squaws. We did not stop around these long. They had no clothing on, only a "britch-cloth"—and were painted up—looked mighty wild, were very large Indians, one of them I should think about 6 ft. high. I did want to kill them, but did not dare to for we were to[o] far from the whites to make an attack—that is all that saved their bacon. Rode on and about

dark we were upon Capt. Starr with his Co. in camp, about 90 men—4 days out from Fort Crook. Capt. kept us all night, gave us our Grub—but tells me he cannot send an escort with me from Surprise as he needs all his men—he must need a strong bodyguard—if he lets me go without an escort I shall think very little of him for Government's use—shall try him again in the morning and hope he will see me through—says Major Mellen said nothing to him.[45] He has treated me very kindly, only he don't want to spare his men—the boys want to go first—would suit them.

● Kimball apparently went north out of the Valley near Camp Bidwell (Daniel Hoag Ranch) and up over Lassen (modern Fandango) Pass. This permitted him to camp near the modern village of Davis Creek the night of the 12th, and somewhere near Kelley Hot Springs or Kelly Creek when he met Captain Starr.

The Pit River Indians were experts in the tall grass (tule) around various lakes and springs along Pit River. Near the juncture of Fall River with Pit River in 1857 General Crook encountered Indians in the tule even less successfully. "Around this lake formed by the springs there was a large area of land covered with tule, or bulrushes. From a prominence . . . we could see a number of Indians weaving about in this tule, their black heads forming a striking contrast with the surrounding green. . . . We found the water in the tule from one to two feet deep, covering a hundred acres or more, the upper end of which bordered the lake. I went out into the tule with the men. . . . The tule was nearly as high as my head, while some was higher. I traversed that swamp in all directions but could see neither Indian nor any signs. The nature of the tule and the water precluded leaving any sign. Sometimes I could see them off at a distance, but by the time I could get there I could see nothing of them. Finally we gave up the search as useless, and returned to camp, to be tantalized by seeing plenty of Indians in the tule."[46]

The signs given by the Indians, which Kimball noted, probably were interpreted correctly, but many emigrants had difficulty along the trails and accepted various signs which the Indians made as Masonic recognition. Two theories have been advanced on this—one that the Indians observed Masons giving such signs to each other, and mimicked them; the other that the Indians actually had been given Masonic instruction. Tradition has it that some of the head men of the Hudson Bay Company instructed the Indians in such signals, and even taught them the rudiments of its creed. Peter Lassen went back to Missouri to secure a Masonic charter for a lodge at Benton City, California, which was opened in October, 1849.[45] Lassen was very intimate with most Indians, especially "Old" Winnemucca of the Piutes, and Governor Roop is quoted as saying that Winnemucca gave him Masonic signs the first time they met.[48] In general, the signs were used as evidence of friendship, although in a few cases they were used by the Indians to throw the unwary emigrant off guard.

July 14th. Captain Starr says he will do the best he can for me when he gets in—his waggons are heavy loaded and he will be 3 days going in [to Surprise Valley]. So I left him. We will [go] to same place where we camped going down. Saw 7 Indians today way out of camp, and herds of antelope. It is now very beautiful on Pitt [sic] River, fine Grass and water—but the road is full of Pitts [sic]. The Indians dig them about 7 to 8 feet deep. They take the dirt they take out of the hole all away, and cover it over with little sticks, then some dirt, and you can not see where they are untill [sic] you spring one of them. This is the way they catch antelope, and if your horse gets in and breaks a leg you have to leave him, so they get him to eat—cattle the same way. They have hundreds of them set. You cannot tell where one is, but [am] using the trail side of the old emigrant road.[47]

● Crook earlier provided this description of the pits: "I was particularly struck by their cunning in all their little ways of capturing a livelihood. They dug pits, some of them fifteen feet deep, with sharpened pegs driven in their bottom, with the sharp end uppermost, along the game trails. They would carefully remove every part of the excavated earth from within sight, and then so deftly cover over the pit with brush and earth that the unsuspecting game would fall an easy

[45] Major Mellen commanded Fort Bidwell that season, after the troops were established in the Valley.

[46] Martin F. Schmitt, *General George Crook—His Autobiography* (Norman, 1946), 36.

[48] Fairfield, *Pioneer History of Lassen County*, 179.

[48] *Ibid.*, 332.

[47] The Lassen road.

prey. It was from this circumstance that the Indians and the River took their name. I saw one of these pits on the old emigrant road, made evidently to capture emigrant stock."[48]

July 15th. Rode to Surprise [Valley], got in about dark to Mr. Hoag's Ranch at the upper end of the Valley—raining hard.

July 16th. Sunday. Got my horse and left Mr. Hoag's for Soldier's Creek, where I left the Boys with the sheep—when I got there found to my surprise they had gone—found a letter saying 30 soldiers had come in from Camp Lyon, I.T., as an escort, and they took the sheep and all hands along with them, leaving word for me to come on as soon as possible—that they will stick to us 20 days or through all the dangerous part of the route, if we will give them one sheep per day as they will not have meat enough to last to camp. I think that is "Bully" only how am I to get to them alone, they having 3 days start of me. But I feel as long as the sheep are going towards Idaho all is well, so I rides [sic] back up to Mr. Hoag's Ranch to wait for Capt. Starr, to see if he will send me on to meet them. Rainy day. My horse Blackbird feels fine as I left him in Mr. Hoag's pasture while gone to Fort Crook.

July 17th. Rained hard all day. Capt. Starr got in first at night *all wet*. We had a big dinner ready for him at Mr. Hoag's (Mr. H. wanting an introduction to get on the right side to sell him hay). Green peas, etc., as Mr. Hoag has a fine garden. Lonesome day for me but Mr. Hoag has treated me very kindly. This ranch is Hoag, Brown, and McCray, "Bully" men—found two of them, Hoag and McCray, were F. & A. M.'s.

July 18th. Out of luck again—it looks as if everything worked against me. Got up this morning and found "Black Bird" had been kicked in the corral and was so lame he was on three legs—went to work upon him using cold water. McCray has given me a horse to ride while here in the Valley. Capt. Starr and I rode down the Valley today to Mill Creek to see how matters stand in the Valley.[49] He said if Black Bird is well in the morning he will go out with me to overtake the sheep. Capt. S. has got his tents all pitched and it looks now like a young village. Camp Bidwell it is called, after General Bidwell.[50]

July 19th. Were to leave this morning but Black Bird is so lame could not. I now have made up my mind it will take my horse 2 weeks to get well. So Mr. McCray is going to let me ride one of his horses out to the sheep and I will send him back by Capt. Starr—and they are to send mine to me by first chance after he is well. Now if *I* don't get kicked tonight think we shall leave in the morning. Took McCray's horse over to the fort and had the blacksmith shoe him so now I am all ready once more.

July 20th. Bid goodbye to all my *kind* friends in Surprise this morning. Captain Starr with 33 men and myself left for "Puable",[51] rode 45 miles, bad road.[52] Sage, Rocks, and Sand—Passing through Alkali Lake Valley—see plenty of Indian signs—road is full of tracks but see no Indians. They stoped [sic] Dunlap near hear [sic] and took 3 sheep from him we hear—hope we may run onto about 50 of them tomorrow—as the Boys are *spoiling* for a fight.

July 21st. Rode 20 miles to water, took lunch, and let our horses graze one hour, then started and took the wrong road. Rode 12 miles out on the "Black Rock" road, returned to where we took lunch, and camped for the night.[53] Rained hard, all got wet through. Capt. only has 6 days rations with him and I now fear he will have to turn back before he gets me tc the sheep. I told him all day he was not on the right road as I know the sheep had never passed over it. But he would not give up so I let him "rip". Killed a lot of sage hens so had a fine supper. Plenty of Indian signs—close picketed our horses, and Capt. put on double guard. Capt. and I went up on a

[48] Schmitt, *General George Crook*, 52.

[49] Mill Creek is about seventeen miles south of Fort Bidwell, the site of the pioneer settlement, Lake City.

[50] This camp was the site of present-day Fort Bidwell.

[51] "Puable" was the Pueblo Valley in southeastern Oregon, which extends north from the Nevada line. The small town of Denio lies close to its south end, and Trout Creek crosses it from east to west at the north end. An early map of eastern Oregon, in its State Archives, renders the spelling "Puebla."

[52] Apparently Captain Starr went north and east around the mountains on the east side of Surprise Valley, and then came south along the west shore of Alkali Lake. This is the only route that fits at all closely to the mileage indicated from Hoag's Ranch and Summit Valley.

[53] The Black Rock Road Junction was south of the westernmost of the three Massacre Lakes.

high mountain before dark, took his glass but could see no Indians. I would rather see them, then we would know where they were.

July 22nd. Rode 42 miles to Summit Valley and camped for the night.[44] Rained hard. Had sage hen for supper. Found "Dick's" carpet sack today in the road. Horses very tired—good water and grass—see 2 men off on the Susanville road with our glass—they have camped—must take us for Indians or they would come up.

July 23rd. Rode to Troute [sic] Creek, 60 miles, where we caught the sheep in camp—all eight soldiers with the boys—*Lieut. Gates* of Oregon in command, also Capt. Henry Johnson of Red Bluff with his train just from Idaho City in camp—and when we rode in and dismounted it looked like a small town. On today's drive we passed through Puable Valley. The mill had been burnt, also all the buildings, by the Indians.

● The most probable location of the camp was near the headquarters of the present-day Trout Creek Ranch, about on the line between Sections 25 and 26, T39S, R36W.

Kimball's exact route across Nevada can only be guessed. Although with troops it still seems most probable that they followed existing roads of that date. This meant that he went south along the old winding trail 25 miles to the junction with the eastbound road south of Surprise Valley's Upper Lake. This, too, wound among the marshy spots and through the East Warner Range. It would have required about 20 miles of travel to reach Forty Nine Lake (then known as Alkali Lake and on the south side of the road to Summit Lake). However, this location was closer to the junction with the Black Rock road (Lassen Cut-off) than the 20 miles he reports, but the cavalry had no exact means of measuring the distance, and Kimball probably adopted their estimates.

On the 21st they made the wrong turn onto the Black Rock road, just south of West Massacre Lake. Coming back they camped there for the night near the Summit Lake Road and moved to the northeast bank of the lake on the 22nd. A map made by Lt. Col. (Brevet) R. S. Williamson of the U. S. Corps of Engineers in 1865–6 provides fairly good detail on these early roads.

From Summit Valley he travelled north on the 23rd along the Virginia City-Silver City road, about 45 miles to modern Denio, and 12 miles further to Trout Creek, about where modern Trout Creek Ranch Headquarters are now located. The mill and buildings which had been burned by the Indians were on Van Horn Creek north of Denio.

July 24th. Camp No. 44 for the Sheep.[45] Drove to Hot Spring Valley, 14 miles—poor grass and water. Sheep started out this morning and I stoped [sic] about an hour to talk with Capt. Johnston, then rode and overtook them. Capt. Starr layed [sic] over on Trout Creek today to rest his horses as we rode them very hard yesterday. Henry Johnston left for Red Bluff, he had an escort from Co. C [1st U. S. Infantry] that went out with him from Fort Crook. Lieut. Gates of the 1st Oregon Cav. [was] very obligeing [sic] to us—he leaves us daily 4 or 5 men, and then he with his command rides to camp, we coming up in the evening, then all camp inside the line together.

● The route followed led northeasterly over a winding course north of Trout Creek and Flagstaff Butte, through a small valley that is known locally today as Hot Springs Valley. Kimball thereby avoided the deep, rugged, box-like gorge through which Trout Creek and the more recent road used today pass. The Hot Spring itself is in the southwest quarter of Section 19, T38S, R38E, and the lay of the land suggests that Kimball camped east of the Spring.

Camp No. 45, July 25th. Drove 3 miles to Clover Creek, layed [sic] over day as Burgess was sick. Very hot day, sheep some footsore—good grass and water. George shot off his pistol today at a rabbit and in a short time the whole Command were saddled up and back to us, as they heard the report and thought it Indians. No shooting allowed, and G. should not of [sic] done so. Very dry barren country.

● The modern maps do not reflect the names used for creeks and other landmarks in 1865. The stream which Kimball calls Clover Creek appears on modern maps as Willow Creek, and the campsite still shows excellent grass, despite the increase in sagebrush since his time.

Camp No. 46, July 26th. Drove 16 miles to Sage Creek, crossing White Horse Creek, good grass

[44] Summit Lake, in Summit Valley, Humboldt County, Nevada, gives the name to the contemporary Indian Reservation.

[45] Evidently the tenth camp from Soldier's Creek, where Kimball separated himself from the sheep.

and water at White Horse.[56] No grass at Sage Creek, very little water in holes—this is on the desert of 30 miles—Low hot Sage Country.[57]

● Today, about where Kimball crossed White Horse Creek, is the headquarters of White Horse Ranch, operated by Paul Stewart. The drive continued northeasterly to a creek now known as Twelvemile, near where Sections 19, 20, 25 and 26 touch in T36S, R40E. However, this was difficult to locate in 1953.

Camp No. 47, July 27th. Drove 22 miles to the head of Crooked Creek. Fine grass and water. "Dick" says, "and put down damned little wood to cook with". Long time since we have seen *a Tree.* Very hot day—all day through sand and sage, or over rocks. Lieut. G. thought he saw some Indians today, so sent us back more men—he goes ahead with his command.

● The course now led north-northeast to Crooked Spring, which is the head of Crooked Creek. This location later became the site of the Tudor Ranch headquarters, now owned by Stoddart Brothers.[58] The spring has been cleaned out and dammed by the Stoddarts to make an attractive reservoir, swimming pool, and home for migratory water birds.

Camp No. 48, July 28th. Lay over here all day on Crooked Creek. Very hot. Lieut. Gates with his command will leave us tomorrow morning for Camp Lyon, as his time is up to be back and report. One of his men today shot one of his fingers off—think he done[sic] it so as to get his discharge.[59] From here to Camp Lyon we have a poor country I hear. "Same old thing"—Sand, Sage, Rocks, and Alkali.

Camp No. 49, July 29th. Drove 15 miles and camped on same creek—Crooked Creek (well named).[60] Had to camp in canyon. Saddle train from Chico camped with us. Lieut. Gates left us this morning. Very barren country we have passed over today. Cannot produce a healthy growth of sagebrush—Hot—Hot—Hot—and very poor water. The Chico Saddle train is a hard looking sight—if a man wants to get bold, or to committ [sic] suicide, let him take a passage ticket in the Cabin of the Chico Saddle Train.

● Apparently Kimball must have camped on Crooked Creek near where U.S. 95 crosses it and in the close vicinity of Crooked Creek Spring. A marker nearby describes an historic event in the Bannock Indian War, thirteen years after Kimball passed through. Kimball's instincts were correct in worrying about the dangers of his canyon camp. Grass along the creek and near the spring was excellent. The white alkali banks and bluffs were a prelude to his Owyhee crossing next day.

With regard to the saddle train, in the early summer of 1865 Major John Mullan became its manager, and started to equip the route for stages.[61] On July 11, the first stage left Chico for Ruby City, after the erection of convenient stage stations and the proper stocking of the route. The trip occupied sixteen days, largely due to the inadequacy of the road and the hostility of the Indians. The latter problem was so exaggerated by the newspapers that the stages were little used, though the saddle train continued to serve the public in the degree of hardihood suggested by Kimball.

The following winter Major Mullan and General Bidwell were in Washington, where Bidwell represented one of the northern California districts in Congress. A bill appropriating $50,000 for a stage road to Idaho's mines was passed in the House, but a second vote sent it back to committee where it died. Throughout 1866 the California and Idaho Stage and Fast Freight Company, with Mullan as president, continued to

[56] White Horse Creek was a popular camp ground for sheep and cattle trail drivers throughout the early 1870's.

[57] White Horse Desert.

[58] Much detailed information on the drive from Trout Creek to Camp Lyon was furnished by the Bureau of Land Management through personal acquaintance of the District Range Manager, A. K. Hanson, at Vale, Oregon, with the terrain. Letter, Chesley P. Seeley, Regional Chief, Division of Range Management, Swan Island Station, Portland, Oregon, March 13, 1953.

[59] More ancient as a malingerer's sabotage to his own person than most people realize.

[60] Near present-day ranch headquarters of "Buck" Davis. This was near the mouth of Palomino Creek.

[61] As a captain, John Mullan was detached from the 2nd Artillery in 1853 to build a military road from Fort Walla Walla on the Columbia River in Washington Territory to Fort Benton on the Missouri River in Montana Territory. His actual road construction, after completing the surveys and other preparations, was from March, 1858, to September, 1862.

operate; a mail contract helped to make it profitable until heavy snows reduced schedules to twice-a-week basis. When the contract expired in 1867, the Central Pacific had been completed far enough to cause an eastward shift in routing for mail service to Idaho. Therewith the stage line went out of existence.

Camp No. 50, July 30th. Drove 9 miles to "Owyhee" river through a long canyon of Castle Rock which was beautifull [sic]. Looked like pictures of some ancient city that had been thrown down by an earthquake. Got to the river about 3 o'clock P.M. Very hot. Swam the sheep across the river with but very little trouble. Got first Sacto [Sacramento] Union I have seen since I left Susanville giving an account of Tom Butler's [sic] fight with the Indians on Queen's [Quinn's] River, [Nevada.] No grass. There is a house here, first one we have seen since we left Surprise Valley—passed Pierce & Francis today with their trains going to Chico, sent back word by him that we are all right.

● Kimball's route apparently led about four miles down Crooked Creek in a northeasterly direction, and then turned five miles east to the crossing of the Owyhee River. This is the natural route to have followed to pass through the "long canyon of Castle Rock." The rocks resembling "an ancient city . . . leveled by an earthquake" probably led to the naming of the village, located two miles upstream, "Rome." The crossing of the Owyhee was two-thirds of a mile downstream from the mouth of Jordan Creek, about on the line between Sections 13 and 14, T31S, R41E.

The house to which Kimball refers is known as Duncan's. The saddle train route crossed here, as did the Winnemucca-Silver City stage route later on (1867). Duncan's ferry was established here, although it was nearly always possible to ford the Owyhee. The ferry and ford were named for Pearl O. Duncan whose father built the original house here in the early 1860's. Duncan's was never a station on the stage route, the run being between Dry Creek and Sheep Ranch going east, but in winter an extra span or two of horses was kept here to be attached as a swing team to help pull the stage up the steep canyon road. The roads to Winnemucca and the Pueblo Valley separated at Crooked Spring, the first turning south to Dry Creek and the second continuing up Crooked Creek.

Camp No. 51, July 31st. Drove 8 miles to Jordan Creek (came to Jordan at last). We are now in the State of Oregon, supposed to be in Baker County.[42] Good grass and water, one Ranch here, men putting up hay for the Indians to set fire to this winter (which they have since done and killed the men). Very hot. No grass only at camping places. Very good road today. Country rolling —have very high winds here at night.

● On this day Kimball travelled easterly to a location somewhere near the present postoffice and store at Arock. However, the ranch he passed became known as the "Sheep Ranch" and served as a station on the stageline. The hay being made at the ranch was wild, but the location was so exposed it seems surprising that the men had the courage even to attempt curing and stacking it.

The "Sheep Ranch" got its name from the fact that in 1863, two now-unidentifiable Californians were driving a thousand muttons to Ruby City to sell to the miners. The band was corraled there at night, but in the early morning the Indians killed both men and drove the sheep back to the Owyhee, down the steep canyon toward Duncan's and around the foot of the hill to the north. Turning them into the first available canyon, they killed and pelted all of them. Tradition states that nearly all of the nearby Indians had pelts for saddles or saddle blankets, the next winter. The "Sheep Ranch" now belongs to Pasco Euquren. Part of the old stage station is incorporated in his headquarters.

Camp No. 52, August 1st. Drove 12 miles to the mouth of Cow Creek—good grass and water—a heavy sage country.

● Kimball could not have camped on "Cow Creek" which flows to the west nine or ten miles north. Obviously he reached Lower Cow Creek, whose mouth at its confluence with Jordan Creek, just a half-mile west of Donner, and which is approximately the distance from the Owyhee River which he reports. This is now known as Ruby Ranch and is operated by Roy A. Shannon. Ruby Ranch was also a stage station. The horse corral, hay barn, and an old fort with portholes

[42] Malheur County, where the sheep were on July 31, was then part of Baker County. Kimball crossed from Nevada into Oregon eight days earlier, on July 23, and was within the borders of the latter state when he passed the mill in Pueblo Valley that had been burned by the Indians.

in the walls still stand on the property. The barn is still in use and is probably the last of the originals built by the Stage Company. No real Indian battle ever took place at the fort, though several scares occurred causing the settlers to congregate there for safety.

Two years before Kimball came, in the summer of 1863, the Indians ran off a herd of cattle from this vicinity, and the father of W. S. Skinner, an immigrant from the Isle of Man, joined with another man to attempt their recovery. They had gone only a few miles when they discovered the camp and bodies of two white men whom the Indian raiders had killed. They also found more Indians than two whites could possibly have handled. So Skinner and his comrade returned to the Jordan Valley and the Indians got the cattle safely over to South Mountain in Idaho.

Camp No. 53, Aug. 2nd. Drove 9 miles to Jorden [sic] Creek—here the road turns to the left—for Camp Lyon—very good road with grass and water.

● Kimball did not follow the southward loop of Jordan Creek but took an old road which cut across country north of the creek for six or seven miles. The camp was where the Company Ranch of the Stage Road was located and near the southwest corner of T29S, R46E. It can be identified today by the 8-mile stone marker on the old road to Ruby City, indicating the distance west of the Oregon-Idaho line. Eight to twelve pairs of stagecoach horses were kept here according to road conditions, four horses being used on the coach in good weather, and six in winter or wet weather. The camp was about 150 yards west of the junction of the old stage road and modern U.S. 95.

Camp No. 54, Aug. 3rd. Drove 10 miles to Camp Lyon where we shall stop and rest for a few days —50 miles to Boise City.

● On this morning the band was headed almost true northeast, away from the creek, passing Mud Spring and going up Hooker Creek to the top of the low divide. This is an attractive valley, and the natural route to Camp Lyon. At the crest of the divide the trail turned north toward modern Sheaville in the Cow Creek Basin, and Camp Lyon was a short distance over the line into Idaho and southeast from Sheaville. It was located in Owyhee County, Idaho, on what is now Section 19, T29S, R47E, about two miles southeast of Sheaville, Oregon.

Today all of the log buildings at the old camp have been moved or dismantled. An old barn on the Knight Ranch, eleven miles north of Jordan Valley and west of Camp Lyon, was reconstructed from logs dragged from the old post buildings. At the old fort the main buildings were only 100 to 150 yards from the steep slope to the south, which must have required extra sentries for protection, but at that date the military often underestimated Indian tactical abilities. Some of the smaller buildings from the post were moved bodily to the McIntyre ranch headquarters less than a mile east of the old Camp Lyon reservation.

Aug. 4th. In camp at Camp Lyon—called on Lieut. Gates and took dinner with him. Dick has built a willow house which protects us from the sun, and we are very pleasantly situated *for us*—sheep doing well.

Aug. 6th. Today is Sunday and I am going to keep it. Got late paper at the Camp, lay and read and sleep all day. Spent the eve at the Fort.

● Camp Lyon was established June 27, 1865, under General Orders No. 36, Headquarters, Department of the Pacific, dated May 6, 1865. Its purpose was to preserve "peace on the lines of emigration to and from Idaho." It was garrisoned by Oregon militia who worked actively to prevent and quell Indian disturbances. The first units assigned to the Camp were Companies A, B, and D, 1st Oregon Cavalry, and a detachment of Company G. 1st Oregon Infantry. It existed four years and was abandoned under General Orders No. 7, Headquarters, Military Division of the Pacific, March 15, 1869, it then being garrisoned by Company M, 1st U.S. Cavalry.[43]

Camp No. 55, Aug. 8th. Drove 8 miles to Small Creek, good grass and water crossing the Summit. Very heavy mountains called the "Owyhee" Mountains. Camped with Flood, a cattleman from Red Bluff.

● The roads beyond Camp Lyon led north or east around the "heavy mountains" which Kimball traversed and today stockmen moving cattle from one range to another are the only people who travel over it. The "small creek" where he camped, in the opinion of S. K. Skinner, could have been either McBride or Dry Creek, as it

[43] Letter, Richard G. Wood, War Records Branch, National Archives and Records Service, Washington, D. C., February 15, 1952.

would have been about 8 miles to either from Camp Lyon, and about four miles the following day to possible camps on Succor Creek.

Camp No. 56, Aug. 9th. Drove 4 miles to Succor Creek, crossing the 2nd summit.[64] Very rough for waggons, splendid Grass and water. This is up in the Owyhee Mountains.

Aug. 10th. I have been quite sick today. Shall camp here at present as the grass and water is [sic] splendid.

Aug. 16th. George and I went out hunting today, shot a fine large fat Deer and some sage hens—shall now go to building us corrals and then go to town to look at the market. So ends this trip here.

● Apparently the market did not suit—probably his sheep were not fat enough for slaughter, and the wool of course had not grown enough since spring to pay for shearing. Besides it would not be long until cold weather when the flock would need the protection of its fleeces. Kimball closes as follows:

From here I moved into Boise City; [then] up the Boise River 25 miles where I kept my sheep untill [sic] November; then took them down to the Snake River 70 miles[65] where I was untill the middle of Jany.; then moved over onto the Boise River about 12 miles where I fed hay until March; then moved to where I am now—am within about 5 miles of Boise City in the Foothills. The grass is fine, sheep nearly fat. Shall shear in about 10 days and then if I know myself they go into the market.

● Evidently the market at Boise City was unsatisfactory in the spring of 1866 and Kimball drove on to the Missouri River.[66] Unfortunately, the journal was mailed east too soon to record this experience. At least two of Kimballs biographers mention this venture without relating it to the trip this journal covers. The existence of the journal was probably unknown to his biographers. Kimball continues:

I was brought up and educated to believe there is a Hell where all had to suffer for their sins. I now think there was one once, and the country over which I have just passed must of [sic] been the place where it was located. I have seen no boundry [sic] lines, but the marks of the heat are still there—and I guess all the rocks that were not used were thrown into the Devil's half acre.

I hope someone will enjoy reading this, for it has been a task to write [copy] it off, and I never should of [sic] done so if my mother had not wanted it. Hoping you all will never have the same road to travel, I am Truly,

G. G. K.

I have just got this finished and have thought I would fool some one all the way through—so I will just say this is the *first day of April* [actually March 11, 1866].

G. G. K.

[64] Sucker Creek, on modern maps.

[65] Apparently in the vicinity of Mountain Home, Idaho.

[66] Guinn, *History of the State of California*, 1541.

CATTLE DRIVING FROM THE OHIO COUNTRY, 1800–1850

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In the spring of 1805 George Renick drove a herd of 68 cattle from the Scioto valley to Baltimore and thus inaugurated the cattle trade between the Ohio country and the east coast cities. This flourishing trade was supported by the long drives across the mountains during the next fifty

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years but then, like the more famous Texas drives of a later day, the eastern drives from the Ohio country disappeared. This paper seeks to bring together material on these early cattle drives from the Scioto and other western areas.

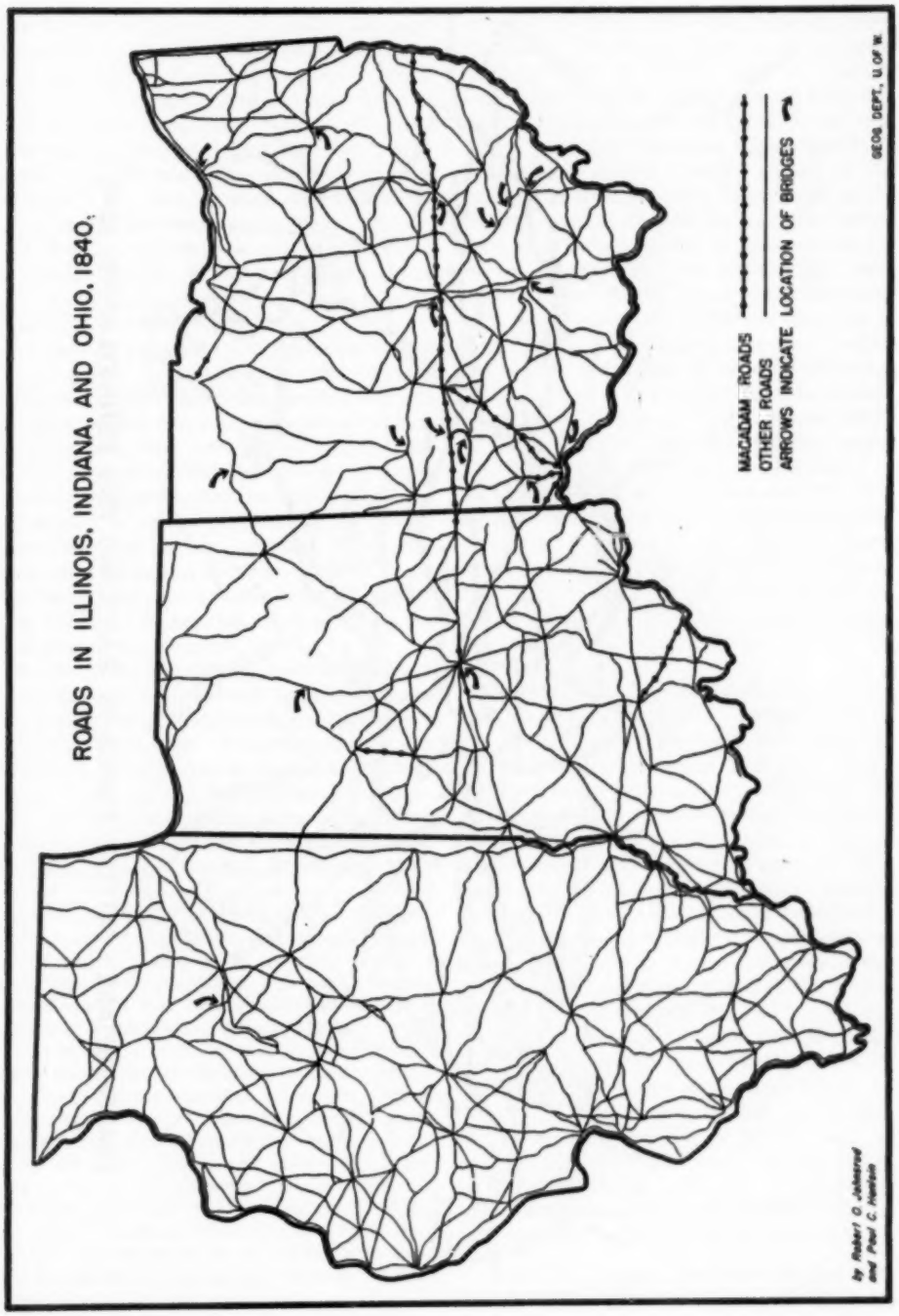
Cattle droving began in colonial America as soon as there was an agricultural hinterland far enough removed from the towns so that it was no longer economical for a farmer to take his cattle to the town butcher one at a time. The fact that pasturage near the towns had to be saved for dairy cows and horses forced beef-cattle grazing inland. Gradually, characteristic patterns developed. In the 1790's the rougher hill districts east of the Connecticut valley were producing cattle which were driven directly to Boston, or else to the Connecticut valley for fattening, and thence to Boston. Meanwhile the Scotch-Irish of the Pennsylvania back country were driving their cattle into the limestone area of southeastern Pennsylvania—around York and Lebanon—where German farmers bought and stall-fed them on corn. These thrifty "Pennsylvania Dutch" feeders, with their corn and wheat fields, chicken yards, butter houses, and big sheds full of tobacco, were also taking thin cattle driven from the Carolina Piedmont or from the salt marshes along the coast. Before the Jay Treaty of 1794, thin cattle were being driven from New Jersey to the posts still retained by the British along the Canadian border. F. A. Michaux saw cattle being driven eastward through Cumberland Gap—on the "Kaintuck hawg road"—in 1802, and probably this had been going on for some years. By 1810, drovers were herding Genesee country cattle to Fort Niagara, New York City, Philadelphia, and even Baltimore. After 1814, herds were driven to New York City from Putnam County and the hilly region around it, and, as the demand increased, from the Mohawk and Cherry valleys. During the 1820's, cattle belonging to the Wadsworth family of the Genesee country became familiar sights at the Bull's Head market in New York City. By this time, cattle from Ohio were regularly marketed at the eastern stockyards, and, indeed, some of the Wadsworth's animals were purchased in Ohio and then driven to the Genesee country for pasture fattening.[1]

Several trans-Allegheny areas offered, by the 1820's, "stock" or thin cattle: the "Knobs," "Barrens," and the "Pennyrile," of Kentucky; the hill country of southeastern Ohio; Highland and Adams counties in Ohio west of the Scioto River; and the grasslands of Darke and Mercer counties northwest of the Great Miami. Farther west was the greatest early range, the area of McLean and Champaign counties in east-central Illinois. The Grand Prairie of Indiana northwest of Lafayette was just coming into grazing use in the 1820's, and after 1840 would support both range and feeding.[2] The west-central Ohio upland had such a mixed character as early as 1815.[3] Most of

[1] Charles Townsend Leavitt, The Meat and Dairy Livestock Industry, 1819–60, doctoral dissertation, 1931, in the library of the University of Chicago, 30, 73–74; Neil Adams McNall, *An Agricultural History of the Genesee Valley, 1790–1860* (Philadelphia, 1952), 94–95; F. A. Michaux, *Travels to the West of the Allegheny Mountains*, in Reuben Gold Thwaites, ed., *Early Western Travels* (32 vols., Cleveland, 1904–07), 3: 245; Bouck White, *The Book of Daniel Drew* (New York, 1911), 81–82.

[2] As late as 1840 the "Grand Prairie" was a sparsely populated range which supplied a few stock cattle to the Wabash farms and to Ohio and Pennsylvania feeders. Henry L. Ellsworth, however, was reported in 1849 to have 1200 acres in corn. Ellsworth, by his writing and agricultural experiments, encouraged settlement of the Grand Prairie, and presently cattlemen were taking up huge tracts there. Moses Fowler fattened as many as 2,000 cattle at a time. Of the Hoosier cattle kings, the greatest before 1850 was a one-time Green Mountain Vermonter, Edward C. Sumner, whose holdings in Iroquois County, Illinois, and Benton County, Indiana, totaled 30,000 to 36,000 acres, and whose herds ran into the thousands. Paul W. Gates, "Hoosier Cattle Kings," *Indiana Magazine of History*, 44: 5–6 (March, 1948); Sherman N. Geary, "The Cattle Industry of Benton County," *ibid.*, 21: 21–28 (March, 1925); U. S. Commissioner of Patents, *Report*, 1843 (Washington, 1844), 386–87. Some Grand Prairie cattlemen were, like Sumner, doing their own feeding or were selling thin cattle to farmers of the middle Wabash valley for fattening; but by 1850 some, probably including Sumner at times, were marketing grass-fed cattle in Chicago, where they were either butchered or sold to farmers from Illinois feeding counties.

[3] When the first settlers in Champaign County, in the northern part of the upland, arrived soon after 1796 they encountered a mixture of forest and gently rolling "induced" long-grass prairie. By 1815 the farmers of this county were receiving an estimated $100,000 a year for fat cattle. Yet for years afterward the typical cattle of the upland were the disease-susceptible native breed known as "barren cattle," many of which went to the feeders of the Miami and


ROADS IN ILLINOIS, INDIANA, AND OHIO, 1840.
MACADAM ROADS
OTHER ROADS
ARROWS INDICATE LOCATION OF BRIDGES
GEOG DEPT., U OF W.
by Robert D. Johnsrud and Paul C. Hanlon

TRANSMONTANE CATTLE TRAILS IN MARYLAND AND PENNSYLVANIA, 1840.

the livestock producers of the ranges contented themselves with supplying stock cattle to adjacent or nearby feeder regions, but those on the Illinois range and the Grand Prairie also sent cattle on flatboat to New Orleans and overland to the East. The other cattle regions of the West were primarily feeder areas: the central Bluegrass basin and the Gallatin-Shelby area of Kentucky; the middle Scioto valley, comprising most of Ross, Pickaway, and Franklin counties; the Miami valleys; the Indianapolis-middle Wabash belt of corn farms; and the middle Sangamon valley, lying in Scott, Sangamon, and Morgan counties.

To get the cattle to the eastern butchers was no simple matter. It was over 800 miles from the Sangamon to the Atlantic, and over 400 from the Scioto to the Atlantic; in between, half the stream crossings had never been bridged and half the bridges were periodically floated away in spring floods. And then too, there was the hump of the Alleghenies to be crossed. Men said the cattle would never get through, and that if they did, they would be walking skeletons, worthless at the stockyards. But the Renicks, Jonathan Fowler, and Thomas Goff, pointing to the drives on the Wilderness Road, disagreed.

By the 1820's, herds of cattle were plodding east along six busy cross-mountain trails (listed from south to north): the Wilderness Road, the Great Kanawha route, the Cumberland Road, the Pittsburgh-Chambersburg route, the Greensburg-Juniata road, and the Erie-Mohawk trail. Probably the first transmontane cattle to reach the eastern market walked over the Wilderness Road ("Kaintuck Road") through Cumberland Gap, Kentucky's historic connection with the East, well before 1800. The toll house at the Gap registered, in 1828, $1,167,000 worth of livestock passing through.[4] This route proved more popular for cattle and hogs than for sheep. It was well located to serve the Bluegrass; but the farmers of Gallatin and Carroll counties, located to the north on the lower Kentucky River, would hardly choose to send cattle east this way. The fastest route from Gallatin County to Baltimore was by way of Cincinnati and the Miami valley pikes which led to the National Road west of Columbus.

To the north of the Wilderness Road lay a second cattle trail, beginning at the bloodied ground of Point Pleasant, opposite Gallipolis, Ohio, and running up the Great Kanawha through Charleston to Guyandot, where it became (1831) the James River and Kanawha turnpike. Cattle, hogs, horses, men, wagons, and coaches jostled in the streets of Charleston. Drovers especially liked the plentiful sources of salt for their animals along the way but the route, like the Wilderness Road, was of little value for reaching the Philadelphia or New York markets. Even the Baltimore market was somewhat more directly accessible to southeastern Ohio by the Cumberland Road than by this route.

The third route, the Cumberland Road or Pike, later the National Road, was superbly located to tap the various trans-Allegheny cattle regions. It is true that the Illinois portion of the road ran well south of the cattle regions of that state and that there was no bridge on the National Pike at Terre Haute; yet the route was much used in droving from Illinois because there was no other usable road at all crossing the Illinois-Indiana border for nearly 100 miles north of Terre Haute. At Indianapolis the Illinois cattle met herds of Indiana cattle, for into the town from the northwest came an excellent road network, partly macadamized by 1840, which served the Indianapolis-middle Wabash fat-cattle district. From Indianapolis the National Road ran almost straight east, across the upper Great Miami, to Columbus, Ohio. Cattle bound for Ross County for feeding sometimes turned off the road at Springfield, Ohio. An excellent system of roads led up the Miami valleys to the National Road; the South Charleston cattle district was almost on the great thoroughfare; and none of the cattle counties

Scioto valleys. By 1837, however, the "barren cattle" were undergoing considerable upbreeding. The crops of the southern portion of the upland by 1840 were corn, hogs, cattle, and wheat, hogs being relatively more important than cattle; and wheat was more important in this portion of the upland than in the Miami valleys. A swamp in Madison County at the site of London was still undrained, but South Charleston was already an important cattle town. Fayette County farmers were well along with the girdling and burning of the natural forest of their county in order to get the greatest possible crop acreage. See Daniel Drake, *Natural and Statistical View or Picture of Cincinnati and the Miami Country* (Cincinnati, 1815), 54; Arlin D. Fentem and Robert Reece, A Preliminary Study of Agriculture in the Old Northwest in 1840, ms. in possession of the authors, University of Wisconsin.

[4] Frederick J. Turner, *The Rise of the New West* (New York, 1906), 102.

of Ross, Pickaway, Licking, or Fairfield were far from it. Cattle from Licking County would strike the National Road east of Columbus, at or near Jacksonville, and droves from Fairfield County would track onto the National Road at Zanesville, where by 1840 a covered wooden "Y" bridge spanned the confluence of the Licking and Muskingum rivers. These and other cattle from eastern Ohio, and most of the Kentucky cattle, comprised the only important eastbound herds which did not funnel through the Scioto river towns of Columbus or Chillicothe. So great was the volume of cattle crossing the Scioto for the East that the great eastern cattle drive may be called the Scioto drive.

The pioneer of cattle-droving on the Cumberland Road was, so far as we know, George Renick, who in 1805 drove cattle from the Scioto valley to Wheeling, by Zane's Trace, and thence through Cumberland and Frederick to Baltimore, by the Cumberland Road. As the Cumberland Road was extended westward, other men followed Renick's example, and soon this great highroad of America —the embryo United States Highway 40—teemed with dusty herds going east.

More of the streams on the National Road were bridged than on other roads. The Brownsville covered wooden bridge—the first bridging of the Monongahela upstream from Pittsburgh—dated from 1833. In fact, the National Road even had a bridge over the Ohio at Wheeling by 1840—the first bridging of that great river. Pittsburgh's Smithfield Street bridge, a famous structure not on the National Road, was built deliberately with low clearance as an obstacle to navigation to Brownsville, Pittsburgh's rival up the Monongahela.[5]

Eastbound traffic on the National Road faced an important fork at Cambridge, Ohio, where the great thoroughfare itself wound east to Wheeling. The road branching off, taken by most of the drovers bound for New York and Philadelphia, ran northeastward to Steubenville and Pittsburgh. Cattle bound for Baltimore stayed on the National Road. Their drovers could still reach Philadelphia by turning off at Cumberland or still later at Frederick.

Most of the cattle passing through Pittsburgh came from Steubenville; but those few coming from Medina County were just as likely to come by way of Wellsville, where there were salt springs and, as at Steubenville, a ferry across the Ohio. Presently there was enough population at Pittsburgh, and enough cattle arriving there, for a local cattle market to arise. The slaughterhouses in Pittsburgh's Bayardstown were in operation by the 1840's.

The fourth and fifth major cattle trails were those running east from Pittsburgh to Philadelphia, one by way of Chambersburg, the other by way of Greensburg and the Juniata River. The Chambersburg road had several alternate routings at its western end and also several at its eastern end. No matter which of the alternate ways to Chambersburg the eastbound drover chose, he had to climb the Laurel Hill and a saddle in the Sideling Hill—several miles south of the site of the Pennsylvania Turnpike Sideling Hill Tunnel. The road between Pittsburgh and Chambersburg via Ligonier was known as Forbes Trace and has been followed approximately by United States Highway 30, the Lincoln Highway. The alternate routing between Pittsburgh and Bedford via West Newton and Somerset was called the Old Glade Road, and, between West Newton and Somerset, is approximately the route of Pennsylvania state highway 31. The three alternate routings at the eastern end of the Chambersburg road were the Carlisle-Reading, the Carlisle-Columbia, and the Gettysburg-Columbia. The old trail between Chambersburg and Carlisle is almost exactly the roadbed of U.S. 11; this trail had the advantage of avoiding the South Mountain—known to geographers as the "Cumberland Prong"—but had nothing to compare in beauty with the descent of South Mountain through the apple-orchard slopes into Gettysburg. The Cumberland Road and Forbes Road were connected by the Cumberland-Bedford road, which ran past Bedford Springs, and the Frederick-Gettysburg road, which ran through the German settlements along the Monocacy. Thus, drovers on their way to Baltimore might switch to the Philadelphia market.

The Greensburg-Juniata route—except in the Greensburg-Hannastown neighborhood, approximately the route of U.S. Highway 22—utilized the natural passage through the mountains provided by the Juniata River valley, but it was less used by drovers than the Chambersburg route, partly because of the apparently greater distance. A contemporary gazeteer estimated it to be only

[5] Richard T. Wiley, *Monongahela, The River and its Region* (Butler, Pa., 1937), 53–56.

five miles farther from Pittsburgh to Harrisburg via the Juniata than via Chambersburg.[6] A more important reason for the relative nonuse of this route probably was the sparseness of agricultural population and the consequent difficulty in getting feed for the drove.

The sixth cattle trail ran through Erie (Pennsylvania), Dunkirk (New York), Geneva, and Fort Schuyler. The stretch between Geneva and Fort Schuyler comprised the Great Genesee Road or the Ontario and Genesee Turnpike, 100 miles long, four rods wide, partly gravel or log-corduroy.[7] Genesee Street in Utica and Genesee Street in Syracuse were both once clogged with cattle walking from the Genesee valley or from Ohio on their way to market over this turnpike. Since 1800 (perhaps earlier) there had been a bridge over the Mohawk at Fort Schuyler, at the foot of Genesee Street. When the Erie Canal was built, it took some of the cattle traffic once using the parallel land route. Droves from central Ohio could reach this route via Mt. Vernon, Wooster, and Cleveland, or via Zanesville, Akron, and Ashtabula; if they were bound for Boston, they would probably take this Erie-Fort Schuyler route, and if they were bound for New York City, they might take it.

Most herds from the Ohio country were started on the trail any time from the middle of February until the first or middle of June and reached the eastern stockyards between April 15 and August 15. By the middle of August, western cattle had to compete in the New York market with the grass-fed herds of New York state. Hence only a limited number of grass, and some corn-fattened cattle, were sent from the West in the fall, to arrive at the market in December. The Philadelphia market had its greatest receipts of beeves in June but receipts were heavy in December when fall-driven western cattle were coming in. Spring driving meant quagmire roads and swollen streams to contend with; by June the rivers were down but the herds on the rutted trails raised long streamers of dust, which could be seen for miles. Pre-spring droving starting in February, or late fall droving, was likely to encounter frozen roads which were thought to be wearing on the animals, perhaps even laming them.[8]

By 1840 the drives also fed the western markets, chiefly Chicago and St. Louis. There were two categories of drives: those of thin cattle from range to feeding area, and those of fat cattle from feeding area to market. Cattle from the trans-Mississippi range after 1846 might go to Chicago, or to the Sangamon feeders, or to the Sangamon via the Chicago market. After about 1815 Illinois thin cattle began to be driven eastward on the National Road, most of them to be fattened in the Miami or Scioto valleys; fat cattle from the middle Wabash and the Miami valley hit the National Road at Indianapolis and Springfield (Ohio) respectively; Champaign County cattle struck the Road at or near Summerford or at Columbus; the Scioto valley disgorged its fat cattle onto the road at Columbus, Jacksonville, or Zanesville; the number passing through Zanesville was increased by Licking and Fairfield county cattle. Some three-year-olds from the west were purchased by local feeders as far east as Lebanon, Pennsylvania, there to be fattened and sold in the nearby Philadelphia market.[9]

It was believed that purebred Durhams, because of their heavier weight, did not travel on frozen ground as well as the common animals.[10] Cattle driven from the McLean-Champaign county range of Illinois to the Scioto valley of Ohio and fattened there were thought by some to take the long drive better than animals of Ohio origin.[11] Drovers encountered mud and dust on the dirt roads, but on the Macadam roads sharp angular stones cut the hooves of the cattle. Many drovers found it necessary to shoe their animals. Blacksmiths along some Macadam roads had machinery to lift the heavy steers off their feet so they could be shod.[12]

The weight lost by an animal on the drive was known as "drift" or "shrink." Both sheep and cattle, as a rule, suffered less "drift" than did

[6] John Melish, *A Description of the Roads of the United States* (Philadelphia, 1814), 55.

[7] Albert Perry Brigham, "The Great Roads across the Appalachians," American Geographic Society of New York, *Bulletin*, 37: 326 (1905).

[8] *The Western Farmer and Gardener* (Indianapolis), 2: 350 (November 15, 1846); *Pennsylvania Inquirer* (Philadelphia), December 31, 1847; *The Dollar Farmer* (Louisville), 1: 152 (March 1843).

[9] Stevenson Whitcomb Fletcher, *Pennsylvania Agriculture and Country Life, 1640–1840* (Harrisburg, 1950), 180; J. F. King, "The Coming and Going of Ohio Droving," *Ohio Archaeological and Historical Publications*, 17: 247 (April, 1908).

[10] *The Dollar Farmer*, 1: 152 (March, 1843).

[11] William Renick, "On the Cattle Trade of the Scioto Valley," in Ohio State Board of Agriculture, *Third Annual Report* (1848), 163.

[12] King, "Ohio Droving," 251.

hogs.[13] But the "drift" depended to a large extent on the amount of feed provided for the animals on the way; one Kentucky drover reported that his hogs suffered no "drift." Indeed, they averaged 150 pounds at starting and 180 pounds upon arriving at New York, a gain of nearly one half pound per day on the trail. The usual weight at which to start a fat steer on the transmontane trail was 900 to 1,000 pounds.[14] Steers heavier than 1,000 pounds apparently suffered a greater percentage of flesh loss on the drive. William Renick said that it cost on the average $11 to drive a 900-pound animal to Philadelphia; $13 to New York; but these may have been maximum figures. A bullock starting at 1,000 pounds, as a rule, lost at least 150 pounds; one of 900 pounds lost from 100 to 150 pounds.[15] The distance to be traveled also had some effect on the "drift."

There were four types of drover: the cattleman who was his own drover; the hired man who did the driving; the agent who drove and kept informed on market conditions; and the free-lance professional drover. This last type is one of the picturesque figures of American history. The consumer resented him as the middleman who kept the price of beefsteak up. The farmers sometimes saw him as a cheat. But some recognized his value: "We should be arrant blockheads to leave our crops ungathered, our fields uncultivated, our homes and our farms neglected, for the sake of ministering to the cupidity of those [the butchers] who are laboring to reduce the price of our stock. . . ."[16]

The professional drover, a figure known from Boston to the Indian country, mounted on his horse, with saddlebags and snake whip, would ride into a community and spend two months during the winter, buying up cattle for the spring drive.[17] Usually he earned a reputation for honesty in his dealings with the farmer. An unscrupulous drover, however, might try to cheat the farmer by taking his cattle on credit. After he had acquired an evil reputation in one neighborhood, he would shift his operations into another. A really shifty drover would do a lot of haggling with the farmer about the price of the steer so that the farmer would be deluded into figuring, "A fellow who drives such a sharp bargain must surely be as good as his word."[18]

The Wadsworth family of the Genesee country, using hired men and agents as drovers on a large scale, sent their men into Ohio to purchase yearlings and two-year-olds and to drive them eastward. The men were usually dispatched in the early spring so that the cattle could feed on grass on the trip eastward. They were given money to pay cash for the cattle and to hire men for the drive. The cattle driven to the Genesee country were pastured there for a while before being marketed.[19]

A favorite place for professional drovers to pick up cattle was the tri-county area around South Charleston, Ohio.[20] Here fat corn-fed beeves and range cattle were to be had. Ranking second only to Chillicothe as the best known cattle town of Ohio, South Charleston sent its herds onto the nearby National Road.

In Illinois, where some ranches of the McLean-Champaign county range covered thousands of acres, the professional drover would appoint a time and place where all the cattle he had purchased in the vicinity were to be assembled. An eyewitness has given us a description, perhaps more dramatic than true, of what happened. It was sunrise and the horses stood tied to young hickory trees while the men with heavy whips in their hands waited for the signal to start the drive. The cattle rushed from the pens, ". . . pell mell amidst a torrent of shouts and yells. The charge was desperate and for some time it was hard to say whether the beasts or their opponents would gain the victory."[21]

The numbers of cattle fed in the Scioto valley

[13] Edward Norris Wentworth, *America's Sheep Trails* (Ames, Ia., 1948), 65.

[14] *The Western Farmer and Gardener*, 2:350 (November 15, 1846); William Renick, *Memoirs, Correspondence, and Reminiscences* (Circleville, Ohio, 1880), 28.

[15] *Ibid.*, 13:26–30; *The Western Farmer and Gardener*, 2:350 (November 15, 1846).

[16] Letter by "Holkham," *Monthly Genesee Farmer* (Rochester, N. Y.), 4:127 (July, 1839).

[17] McNall, *An Agricultural History*, 95. One of the Renicks in the winter of 1853–54 bought 1200 head of cattle in northern Texas. William Renick, *Memoirs*, 24. On the basis of the origins of the Texas population, we may assume that many of the early Texas cattlemen practiced droving in Kentucky, Ohio, and Illinois.

[18] White, *Daniel Drew*, 28–32.

[19] McNall, *An Agricultural History*, 135.

[20] *The Ohio Cultivator* (Columbus), 1:117 (August 1, 1845).

[21] William Oliver, *Eight Months in Illinois* (Newcastle-on-Tyne, 1843; Chicago, 1924), 106.

and the counts made of cattle actually passing along a transmontane trail are evidence that there must have been hundreds of drives between 1800 and 1850, of which we have record of only a few. Ephraim Cutler says he drove a herd from Marietta to the headwaters of the Potomac in 1800. Captain Jonathan Fowler of Poland, Ohio, drove a large herd which he had purchased in the Canfield area to the Philadelphia market in 1804.[22] After George Renick's famous drive to Baltimore, Cutler was driving thin cattle to York, Pennsylvania, and Allegheny County, Maryland, in the years 1809–12. George Renick's brother Felix, best remembered for his work in the Ohio Breeding and Importing Company, made his first recorded drive in 1815. While Felix was on this drive, Lewis Heath of Paris, Kentucky, was acting as his agent in Kentucky, buying thin cattle there for him. In 1816, Thomas Goff of Clark County, Kentucky, drove 130 "Patton" cattle to the same place. In 1818 or 1819, Daniel Drew of New York, a professional drover, took a big herd of about 2,000 across the mountains, but lost 400 to 500 during the drive. Drew's biographer mistakenly claimed this was the first drove of cattle to be driven east across the Alleghenies. Before 1818 the Wadsworths of the Genesee country had sought an agent to go to Kentucky and Indiana to purchase from 100 to 200 head of cattle; and in 1818 the family planned shipment of 8½ tons of cheese via Olean and the Allegheny River to Kentucky, "there to vend it and to place the proceeds in a drove of young cattle to this place, keep them on the flats for one or two years and send them to the New York market." In 1818, George Renick and Joseph Harness sent a drove to New York City; William Renick claims that this was the first transmontane drive to that place. Droves probably numbering up to 1200 head each, presumably from Kentucky, were passing between Winchester and Staunton, Virginia, about 1820 or 1821; a "Major H." near Middletown made a practice of buying some of these animals for feeding. Samuel Lutz of Pickaway County, Ohio, in 1822 drove a herd of fat cattle to the Baltimore market. A drove of cattle was taken to New York City in 1824 by Richard Seymour, also of Pickaway County. Another lot was taken, three weeks later, by William Renick himself. A writer from the central part of New York state complained in 1826, ". . . our western neighbors, who drive cattle from a vast distance to the Atlantic markets, are too powerful for us in their rivalship . . ."; but it is not entirely clear whether the reference is to Ohio or to Genesee stockmen. Young Thomas Atkinson of northwestern Indiana, one fall in the 1820's, drove his brother's herd of cattle to Pennsylvania, presumably to the feeders of southeastern Pennsylvania. In 1833, George Renick led a drive to New York City via Wheeling. Probably also in the 1830's, Isaac Funk, newly moved from Madison County, Ohio, to McLean County, Illinois, sent at least one herd to Buffalo, New York. William Renick in 1842 took a drove of his father's Durhams to the Brighton market near Boston. A "General Shelby" of Kentucky drove a herd of Shorthorns to the Bull's Head in New York City, arriving there in December, 1842, or January, 1843. Also by 1843, stock cattle were being driven from the Grand Prairie of Indiana to the feeding area of Pennsylvania.[23] In 1849 someone in Morristown, New Jersey, went to the trouble of asking each drover passing through on the road to New York how big his herd was and where the cattle were from. The tally, presumably made from March 1 to August 1, and comprising most of the cattle driven over the Pennsylvania trails to New York City before the fall season, mounted to 10,983 head.[24] From Benton County, Indiana, Charles Sumner was sending cattle on foot to New York City in the early 1850's at the rate of 100 cattle every two weeks during the growing season.[25]

[22] William T. Utter, *The Pioneer State, 1803–1825*, in Carl Wittke, ed., *The History of the State of Ohio* (6 vols., Columbus, 1941–44), 2:157.

[23] Felix Renick's Account Book, ms. in possession of Renick Cunningham, Chillicothe, Ohio. Published works have heretofore placed the date of Felix's first known drive to Philadelphia at 1817. Lucien Bechner, "Kentucky's Glamorous Shorthorn Age," *The Filson Club History Quarterly*, 26:32 (January, 1952); Charles S. Plumb, "Felix Renick, Pioneer," *Ohio Archaeological and Historical Publications*, 32: 21 (January, 1924); White, *Daniel Drew*, 81; McNall, *An Agricultural History*, 95; William Renick, *Memoirs*, 97; *The American Farmer* (Baltimore), 3: 105 (June 29, 1821); King, "Ohio Droving," 247; Geary, "The Cattle Industry of Benton County," 28; Albert Robinson Greene, "A Little McLean County History," Illinois State Historical Society, *Journal*, 8: 461 (October, 1915); William Renick, *Memoirs*, 58; U. S. Commisioner of Patents, *Report*, 1843, p. 386–387.

[24] *The Ohio Cultivator*, 5: 307 (October 15, 1849).

[25] Gates, "Cattle Kings," 15.

In the published accounts, and in faded manuscripts packed away in the farmhouses of the Scioto valley, we catch a glimpse of what the drive itself was like.[24] The herd or "drove" seldom numbered less than 100 head, usually about 100 or 120 head, sometimes up to 200 head, occasionally a thousand or more. If the cattle were fat, a drove of thin or stock hogs was sent along to eat the droppings of the cattle and the grain that the cattle wasted. A drove of horses could travel 22 miles per day; a drove of stock cattle, 9 miles; fat cattle, 7 miles; cattle with hogs following, 5 miles. The herds moved more slowly across the mountain ridges such as Keyser's Ridge or the Polish Mountains on the National Road and Laurel Hill or Sideling Hill on the Pittsburgh-Chambersburg road, but moved faster on easy sections of the road.

The crew consisted of a "boss" and one to five others. The boss rode on horseback, with saddlebags which contained a change of "linen" for himself and the men who were afoot; on his saddle was a roll of extra garments for use by the crew in stormy weather. He was armed with a good "blacksnake" or "Centerville" whip. In the case of large droves, a second man might also be mounted. Many drovers took no crew but depended on picking up "pike boys" along the route to help them with the herding. Sometimes the boys could go for one day only and had to return to their parents at night. In other instances they were allowed to be gone for two days, and, through the Pennsylvania mountains, where farms were farther apart than in Ohio, they were usually employed for several days.

Sometimes the professional drover wanted an assistant who could take charge in his absence. The journal of a young Delawarian tells how he was hired for this purpose:

> the Dr. Said Mr. Stite [the drover] can not be with the Drove all the time, he has bills to collect for horses sold last Spring on other Roads want a good man to take charge of the Drove pay toll make arrangement at Hotel for the drove and men, pay all bills in his absence. . . .

Then the drover and his prospective assistant bargained about the wage:

> I told Mr. Stite I would like to go as his assistant. He Said he would give fifteen dollars did not want me to work but see the men attend well to the Drove and pay all bills in my absence. I do not think that enough I will have a good deal of care and responsibility. I will do the very best for you I can. I will give you 20$ I will go for 25$ Dr. Ham then said *Stite* be liberal I know this young man will Suit you first Rate. well he Said I will give 25$ as the Dr. thinks I will be well Suited![27]

The order of march varied somewhat. Usually, one man or boy on foot went ahead, leading the "lead" ox with a rope tied to its horns; the boss, on horseback, rode behind the first 40 head; a third man, usually afoot, or a boy afoot, brought up the rear, applying his "Centerville" to lagging steers. If the entire crew was mounted on horseback, one of them usually had the job of riding ahead and jumping off his horse to pay tolls. The boss was often not to be found with the herd at all; he would be riding ahead, looking for a place for the outfit to "noon," or for a good place to cross the next river, or he might be making arrangements at a "drove stand" for spending the night; sometimes he would be far away on another road, collecting money for animals sold along the way on last spring's drive, or paying farmers for animals taken on credit during the last drive. Just as the humans had an order of march, so the animals drifted into one; in the case of a mixed drove, the sheep after the first day or two got to know the cattle and crowded in close behind them without any urging; the cattle marched, seriously and soldier-like, abreast of one another, the animals behind walking in the footsteps of the ones ahead, and thus hoofing the roads into what swearing stagecoach drivers called "cattle billows."[28]

As the dawn broke, the boss would be up and around, looking over the herd to see if any animals had died during the night. Next he would go up to the keeper of the "drove stand"—sometimes an inn but usually just a large farmhouse—to pay the night's bill, according to the rates previously agreed upon. Overnight grazing was usually 5 cents a head, though sometimes it would be obtained for less—say $1 for the whole herd of 100; forage might run $10 a night for the whole herd. The corn might be purchased for around 25 cents a bushel or 37½ cents a shock; lodging ran from 37 to 87 cents for

[24] Fletcher, *Pennsylvania Agriculture*, 180; Wentworth, *Sheep Trails*, 67; *The Western Farmer and Gardener*, 2:350 (November 15, 1846); White, *Daniel Drew*, 84–85; King, "Ohio Droving," 249; and the Renick papers in possession of Renick Cunningham.

[27] Marie Windell, ed., "James Van Dyke Moore's Trip to the West, 1826–1828," *Delaware History*, 4:102 (September, 1950).

[28] King, "Ohio Droving," 249.

one man, to 3 to 9 dollars for the whole crew, including meals. There was not always an outright cash payment; the lodging and fodder bill could be paid by leaving with the farmer the calves that had been dropped during the night or the previous day's march, or by leaving sick critters. Other times, however, the drover paid the bill in cash and swapped the new-dropped lambs or calves for some of the farmer's fatlings.[29]

After these financial arrangements had been made, the boss returned to his herd and the day's drive got under way. Excitement was likely to come quickly. Some animals might stray or the herd might get tangled in other traffic. At midday the whole outfit halted in some well shaded lot to "noon"; while the cattle were resting and feeding the boss would scout a river to be crossed in the afternoon. If there was no bridge and the water deep, the river crossing was likely to be the crisis of the day. One man might be sent across to tie a rope to a tree on the opposite bank and the cattle forced to swim across, using the rope as a guide. If there was a ferry, the lead ox and some ten bullocks might be put on board to serve as leaders and the rest of the herd driven into the river to swim in the wake of the ferry. Summer drives, however, might find the streams dry. In the drought of 1839, the Ohio River fell so low that on August 21 there was only 21 inches of water in the channel at Pittsburgh, a focal point of cattle trails.[30]

If the outfit came to a drover inn, such as "Aunt" Hetty Jackson's on the National Road east of Wheeling, during the afternoon, the men might stop for cider or "beer and cakes."[31] At night the outfit would put up at the "stand" selected in advance by the boss, and the men would grumble if the food and beds were not as good as at Ezekiel Bundy's famous stand near Barnesville, Ohio.[32] After supper, the boss would check up on his animals, looking for signs of injury or sickness. If all were well and the animals were behind fences and contentedly feeding, he might relax, perhaps taking a smoke of Peebles (Ohio) burley tobacco. One drover later remembered:

> . . . I have stayed over night with William Sheets on Nigger Mountain, when there would be thirty six-horse teams on the wagon yard, one hundred Kentucky mules, in an adjacent lot, one thousand hogs in other enclosures, and as many fat cattle from Illinois in adjoining fields. The music made by this large number of hogs, in eating corn on a frosty night, I will never forget. . . .[33]

Nor were the hogs furnishing the only music:

> . . . the wagoners would gather in the bar room and listen to music on the violin, furnished by one of their fellows, have a "Virginia hoe-down," sing songs, tell anecdotes, and hear the experience of drivers and drovers from all points on the road. . . .[34]

The scene was not always so rustic. At John Miller's Inn, 7½ miles west of Hagerstown, on the heavily traveled National Road, young men and maidens of the vicinity, stagecoach drivers, wagoners, and cattlemen tripped gayly to the notes of everything from the "hoe-down" to the cotillion, winding up usually with the Virginia Reel.[35]

Dawn meant another day on the road for the outfit. About 60 to 80 days after leaving the Scioto, the herd would reach the seaboard market city.

The end of driving must be attributed to the coming of the railroads, but the interesting thing is that it did not occur immediately and that driving *within* the Middle West continued into the twentieth century. Early railroad rates were considered high by the cattlemen: "For lame bullocks that are sometimes sent from Harrisburg to Philadelphia, they charge half as much as it costs to drive them all the way—750 or 800 miles—from Kentucky to New York—the one being $8.00, the other estimated at about $16."[36] Many cattlemen at first believed that being crowded in a moving cattle-car so frightened the animals that they would lose more poundage than in walking across the Alleghenies; it was the thought in 1846 that

[29] White, *Daniel Drew*, 84–85; Renick Cunningham, interview with the author, Chillicothe, Ohio, April 22, 1953; Felix Renick's Account Book; King, "Ohio Droving," 250; Wentworth, *Sheep Trails*, 67; Windell, "Moore's Trip," 102–103.

[30] King, "Ohio Droving," 251–252; *The Daily News* (Cincinnati), August 24, 1839.

[31] Windell, "Moore's Trip," 90.

[32] King, "Ohio Droving," 249–250.

[33] Jesse J. Peirsol, quoted in Thomas B. Searight, *The Old Pike* (Uniontown, Pa., 1894), 142–143.

[34] *Ibid.*; on a cattle drive the drover was the employer and the drivers were the men he employed.

[35] *Ibid.*, 198.

[36] *The Western Farmer and Gardener*, 2: 350 (November 15, 1846).

after twelve hours in the cattle car, cattle must lie down, "which they cannot do in the cars like a hog."[37] Probably for these reasons Sumner's cattle in the 1850's were still being driven to the eastern markets. Even after the Civil War, the Goodwine family drove cattle from Warren County, Indiana, and Vermillion County, Illinois, to Chicago.[38]

Lower freight rates, better accommodation for livestock, more branch lines—all helped to destroy old prejudices and bring an end to long-distance driving east of the Mississippi. The driving itself had become meanwhile increasingly awkward. As towns and cities grew in population it became more and more difficult to drive livestock through their streets. To meet this problem, the livestock markets were moved toward the outskirts of town, the New York market moving from its Wall Street location of colonial times to a location in the 1830's near 42nd Street and Broadway. But it was a losing battle and when the houses reached the "eighties" north, driving to Manhattan disappeared.[39]

Short-distance driving in southern Ohio continued until the advent of the motor truck. The system was essentially the same in 1900 as had been used nearly 100 years before. A professional drover would come into, say Ross County, and associate himself with a local farmer who would take him around to farms where there were likely to be cattle available. A herd would be assembled and driven up the Scioto valley to the railroad at Columbus.[40]

How well did the driving in the first half of the nineteenth century pay? A professional drover most years could buy cattle for two to five cents per pound.[41] The cost of driving a herd of 100 cattle from Kentucky or Ohio to Philadelphia or New York ran from $1200 to $1500, depending on the actual distance traveled.[42] At the end of the trail the driver might be bankrupted or might win a small fortune, for cattle prices fluctuated sharply. George Renick got an average profit in 1805 of $31.77 a head—which for 100 head meant $3177 clear.[43] Daniel Drew in 1818 or 1819 got about the same margin—something over $30 a head—but it is not clear whether this figure takes into account the loss of 400 to 500 head on the drive.[44] Felix Renick in 1817 got an average of $133 a head for cattle at Philadelphia.[45] If we allow $45 for the cost of producing a steer and $11 for the cost of getting him to Philadelphia, this would mean a profit margin of $77 a head, or $7700 for a drove of 100. In 1819, Felix had $309,973 in the bank at Chillicothe.[46] On the other hand, in 1818 the drove sent by George Renick and Joseph Harness to New York brought, according to William Renick's account, a profit margin of only $17 a head. Renick's drive of 1824 is said to have been only "reasonably profitable."[47]

Naturally, with prices going up and down, rumors flew along the cattle trails. A drover coming back would be questioned by a drover on his way east; if the eastbound cattleman heard that the Baltimore market was glutted, he might change his mind and take his herd to Philadelphia instead. By the time he got to market, the situation might be completely reversed. To wait outside the market city for the prices to go up was not always practicable, for the local farmers or drove-stand keepers might seize the opportunity to charge exorbitant prices for grain and pasture. Speculators often met the drover three or four days' journey from the market city to try to take advantage of him by frightening him with reports of a market glut and then by offering to relieve him of his herd at only a "minimum" loss.[48]

While the drover was worrying about vicissitudes of markets, the consumer was decrying him as a middleman who allegedly kept the price of beefsteak high. A New York agricultural paper warned that if the consumer tried to boycott beef:

> . . . we will eat our beef, sell you our pork and mutton; keep our cows, and in the increased consumption of dairy products, clear from each cow a large part of what she would have brought in the city market as beef. . . . When hungry stomachs and lank limbs, are pitted against clover fields, fat oxen, and burdened granaries, there is no great difficulty in determining which must knock under.[49]

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[37] *Ibid.*

[38] Gates, "Cattle Kings," 20.

[39] Wentworth, *Sheep Trails*, 67.

[41] Renick Cunningham, interview with the author, Chillicothe, Ohio, April 22, 1953.

[42] King, "Ohio Droving," 249–250; William Renick, *Memoirs*, 26–30.

[43] *The Western Farmer and Gardener*, 2: 350 (November 15, 1846); William Renick, *Memoirs*, 26–30.

[44] King, "Ohio Droving," 249–250.

[44] White, *Daniel Drew*, 86.

[45] Plumb, "Felix Renick," 21.

[46] Felix Renick's Bank Book, ms. in possession of Renick Cunningham, Chillicothe, Ohio.

[47] William Renick, *Memoirs*, 97.

[48] King, "Ohio Droving," 252.

[49] *The Monthly Genesee Farmer*, 4: 124 (July, 1839).

But the Ohio or Kentucky cattleman was not so sure; for he was not located near enough to urban populations to be able to switch readily from beef production to dairying.

The effect of the transmontane drives upon the beef cattle industry of the seaboard states was not as great as might be supposed. Connecticut farmers kept only a dwindling share of the New York City cattle market; and the New York state beef cattle industry also declined. In fact, there was a 5.5 per cent decrease in the total number of cattle in the seaboard states from the 1840 to the 1850 census. But with the beef boom of the 1850's, the number of beef cattle in seaboard states south of New York increased 17 per cent. In 1856, after the railroads had crossed the mountains, only 16 per cent of the cattle received at the Cambridge market near Boston came from outside New England.[80]

The drives seem to have had their greatest long-term effect in the Middle West, where they did much to mold the agricultural economy of the region. Born of necessity, the drives came first out of two corn-producing lowlands, the Bluegrass and the middle Scioto valley. The drives paid well enough to be continued for half a century and to entice the farmers of other areas into the business of raising corn and fattening cattle. The success of this business stimulated the selective breeding of beef cattle in the Middle West and helped seat it in Ross, Pickaway, and Fayette counties (Ohio), where vestiges of it remain today.[81] Without driving, which brought thin cattle from the range to be fattened for distant markets, the distinctive feeding areas might not have been developed—the middle Scioto, middle Wabash, and middle Sangamon. The drives from range to feeder area set the range-feeder relationship which has now come to exist between the Great Plains and the corn belt. Chicago in 1845 was the chief place where stockers off the range were marketed to corn farmers;[82] today, since the corn belt has pushed the range westward, Kansas City is the main location of this function. Philadelphia, the destination of so many transmontane drives, has been replaced by Chicago as the greatest market for fat cattle. The expansion of the corn belt into areas which had been range began long before the Civil War; as feeding proved successful, it expanded from its original location on the middle courses of the Scioto, Wabash, and Sangamon into adjacent or nearby areas which had a natural geography favorable for feeding.[83] Cattle feeding did not expand into those ranges which could not produce abundant corn—parts of the "Barrens" of Kentucky, for example. In the oldest of the western cattle fattening regions, the Kentucky Bluegrass, men turned to the breeding of slaves and fast horses, and the raising of tobacco, though as late as 1860 this was still Kentucky's greatest fat-cattle region.

[80] Leavitt, "Livestock Industry," 42, 51, 60–61, 74, 75.

[81] Of the imported cattle sold by the Ohio Breeding and Importing Company on October 29, 1836, 18 remained in Ross County, 11 went to Pickaway, 4 to Highland, and 2 to Fayette. Plumb, "Felix Renick," 27–44. The southeastern margin of the west-central Ohio upland is still a cattle and breeding center; Ohio state highway 384 all the way between U. S. Highway 22 and Greenfield is lined with breeding farms.

[82] Helen M. Cavanagh, *Funk of Funk's Grove* (Bloomington, Ill., 1952), 51–52.

[83] U. S. Census Office, *7th Census*, 1850, 624–27, 728–29.

BOOK REVIEWS

Farm Policies of the United States, 1790–1950: A Study of their Origins and Development. By MURRAY R. BENEDICT. (New York, Twentieth Century Fund, 1953, xv, 548 p., $5.00).

This careful history of farm policies sets a high standard of research and exposition. It is extraordinarily complete, tracing not merely the outlines of policies directly concerned with agriculture but policies bearing indirectly on farming—monopoly, freight rates, highway construction, economic stabilization and employment, relief measures, international trade and tariffs The author does not merely record the bills and laws relating to farming but places them in their historical, economic and social setting. It could almost be said that this book is an economic history of the United States, with special reference to farming. It traces the laws passed and the bills that failed of passage, and analyzes the political and economic forces in the Congress and the adequacy or inadequacy, the wisdom or folly of the farm organizations themselves that

brought passage or failure of these measures. For farmers and farm leaders Professor Benedict's book is required reading.

The author does not usually analyze very fully the theoretical aspects of the various farm policies—that would have been impossible in the scope even of this large book—but confines himself generally to observable facts as to results, as far as facts can be established; and his conclusions are judicious. Indeed the book is a work of wide scholarship and understanding.

Professor Benedict has not outlined any farm plan of his own; indeed his book makes clear the vast difficulties in the way of any satisfactory plan. One lays the book down with a feeling that many of the laws have been ineffective, or even worse than that, that there has been and is a hodge-podge of badly organized alphabetical agencies, each doing something for or to the farmers, and that a systematization of these agencies and an agreement on objectives are needed but will call for more wisdom, courage, and statesmanship than are likely to be found in Congress. A few conclusions do stand out clearly: no one plan can be adapted to all farm regions, producing different crops; there should be a distinction between emergency measures and those designed for the long run; and most remedies that seemed appropriate before 1914 will not serve in the future, for economic conditions have changed profoundly. "The world of the future is far more likely to be concerned over shortages than over surpluses," although "undoubtedly there will continue to be periods of fairly general surplus production in agriculture and frequent overproduction of one or another specific crop." "It would be unrealistic to expect a situation of almost chronic depression in agriculture and a need for virtually continuous governmental intervention in its behalf."

Reading this book, I couldn't help thinking that it would be most worthwhile if someone would write an equally good book on the farm policies of other countries. From a superficial study of farm policies, particularly of the Scandinavian countries, I have the impression that we might learn a great deal from such a book, that the problems of some other countries, Denmark and New Zealand for instance, have been somewhat like our own and have been attacked in somewhat the same way as in the United States.

John Ise, University of Kansas.

The Golden Age of Homespun. By JARED VAN WAGENEN, JR. (Ithaca, Cornell University Press, 1953, xviii, 280 p., $3.50).

In content, this is a magnificent book and in using the descriptive "magnificent" this reviewer does not exaggerate. Born more than eighty years ago on an east-central New York State farm where four generations of van Wagenens have followed agriculture as a way of life, its author has given us a detailed and most interesting record of the lore and methods of the "Homespun Age" which dates from the earliest settlements, reached its fullest fruition in the generation following the Revolution, and drew to its close about the time of the Civil War.

No one could have been found whose qualifications better fitted him for this undertaking. At sixteen he entered Cornell University as a student in the Department of Agriculture. Returning to the van Wagenen farm after graduation, he soon became associated with the Farmers' Institute movement. For more than twenty years he made migratory pilgrimages, mostly during the winter months, to all parts of New York State as well as to neighboring states, thus giving him an intimate acquaintance with the country side. Fortunately, too, as a young man, the author made it a practice to tap the memory of older men of the generation that was passing. From them he derived a wealth of information which he in turn enhanced by a lifetime of research. The Farmers' Museum at Cooperstown, New York, operated by the New York State Historical Association has, from its inception a decade ago, had Jared van Wagenen's enthusiastic support. Of the almost fifty illustrations which Erwin Austin selected for the book the Museum furnished the source material for approximately four-fifths of them.

Finally, the author possesses those qualities of mind and heart which contribute to the making of an outstanding book. As Louis C. Jones, Director of the New York State Historical Association so well expresses it in his Foreword, throughout the book and woven into its texture are Jared von Wagenen's "strong sense of moral values, his dry humor, his deep love for the world of his fathers which he has made his own, and love, too for the land itself and those who till it with a steady hand."

Though a dozen years younger than Jared von Wagenen, the author of this review is also a descendant of three generations of New York State farmers and was born and reared on a New York State farm. The story of farm life and the accounts of the methods and handicrafts of the "Homespun Age" which are chronicled in the twenty-three chapters of this book, therefore, bring back happy memories of an age that the present generation of Americans—rural or urban—will never know, other than from the pages of this book. Rural America today is a land of specialization and mechanization and the countryside is rapidly being urbanized.

In a very real sense this is the story of a pioneering people when hand skills were the key to survival. Using Cattaraugus, the latest in settlement and development of the counties of the State of New York, as a kind of stage for the pageant of the "Homespun Age," the author gives the reader a series of word pictures of how the land was cleared, the log-house,

what the wilderness afforded in the way of food, of the ox-team and its equipment, the stump fences, crops grown by the pioneer, and meadows and pastures.

Approximately half the volume is devoted to describing the leading handicrafts of the "Age of Homespun." Quite correctly the author calls it "The Wooden Age." Homes, barns, ships, furniture, barrels, buckets, tubs, pails were all made of wood. It was an age of carpenters, coopers, and joiners; cabinet and wagon and sleigh makers were indispensable. So were the saw mills and the grist mills. One of the most informing and delightful chapters in the book is Chapter XIV, entitled "The Old Millstream."

Equally fascinating are the account of other occupations of "The Wooden Age": shingle making, bridge building, including covered bridges, tanning leather and making harness, cobbling shoes and boots, the making of clocks, charcoal, potash, maple sugar, beekeeping and the production of honey, attempted silk production and the production of dairy products. Minor crafts are not overlooked. Among these, attention is given to pottery, basketry, brick-making, tile, lime and brewing.

Two chapters—XX and XXI—are devoted to a description of the farm implements of the "Homespun Age" and to their production and relative efficiency. Anyone who doubts the change effected by the introduction of modern farm machinery should read the account of the methods employed by American farmers of the "Age of Homespun" in the harvesting and threshing of grain. Only the person who has swung a cradle or bound wheat, rye or buckwheat by hand from daylight to dark can really know the meaning of such terms as "hard physical work" or "dependence on human beings for manpower."

The last two chapters are devoted to the household handicrafts, especially the textile arts as expressed in wool and linen. The author's closing remarks about knitting and the importance of every farmer of the olden day having a pair of heavy knitted socks inside well-greased leather boots in bitter winter weather brings from this reviewer a loud Amen!

As Jared van Wagenen himself says, farm life in the "Age of Homespun" seems to us in the urbanized, mid-twentieth century to have been narrow and hard, lacking in privilege and filled only with eternal toil. The great majority of those of the author's generation whose roots are deep in the soil would, this reviewer believes, agree with him in his belief that to those of the Homespun era, it seemed a good life, and "that they, too, found time for laughter and song and love and kisses and withal a certain high hopefulness which we perhaps do not possess."

Be that as it may, the contents of this book is social history of a very high order. It richly deserves to be the first volume to be published under a Dixon Ryan Fox Memorial Fellowship granted by the New York State Historical Association.

Harry J. Carman, Columbia University.

The Influence of England on the French Agronomes. By ANDRE J. BOURDE. (New York, Cambridge University Press, 1953, 250 p., $6.00).

In eighteenth-century France there were two groups of writers concerned with agricultural activities: the physiocrats, primarily economic theorists who believed agriculture to be the main source of wealth, and the *agronomes*, who were students of agricultural methods. The former knew little or nothing about farming; the latter knew a great deal and played an important role in the agricultural revolution. Although the agricultural orientation of the physiocrats and their fellow *economistes* has long been well known to English reading scholars, this is the first time that the work of the *agronomes* has been given consistent attention for our benefit.

The effective part of this volume begins with a discussion of Jethro Tull's *Horse-hoeing Husbandry* as the pioneering English compendium in spreading information about scientific agriculture. After a brief account of its errors and shortcomings the reader is shown in detail how Tull's sounder ideas were introduced into France, principally by Duhamel du Monceau, whose *Nouveau Système* was a vast improvement on Tull's book. Through it the French agriculturists met such advanced ideas as the replacement of the three field system by scientific crop rotation, the utilization of selected seed, machine planting and cultivation, as well as the introduction of new crops, especially artificial pasture. Such a great number of novel notions had a heady effect on the *agronomes* and the result was the production of a lively controversial literature—more of it, apparently, than of farm produce—or to use the author's own summary of the English influence, it was ". . . less a fact of economic history, than a fact of the history of ideas."

Occasionally scattered through more pages than the subject warrants are fleeting glimpses of items one wishes had been developed. Two examples will show how the reader is tantalized. First, it is suggested that the backwardness and rigidity of French society made revolution a necessary prerequisite to agricultural advance. Second, we are able to infer that here again in the area of agricultural innovation there was that myopic concern with the greatest return on the smallest possible investment that has always plagued French economic life. Such matters as these, coupled with too great a preoccupation with the narrower details of the subject, make this volume of rather slight value except in so far as it serves to introduce a little known subject.

Henry Bertram Hill, University of Wisconsin.

NEWS NOTES AND COMMENTS

ILLUSTRATIONS

The half-tone illustrations which appear in this issue were made possible through the generosity of a friend of the Society.

ACTIVITIES OF MEMBERS

Lewis E. Atherton of the University of Missouri has received a Rockefeller grant which will enable him to spend the spring and summer of 1954 at the Havarrd Research Center in Entrepreneurial History and at other eastern libraries.

LaWanda F. Cox of Hunter College is the author, with John Cox, of "General O. O. Howard and the 'Misrepresented Bureau,'" *Journal of Southern History*, 19: 427–456 (November 1953).

J. I. Falconer, a charter member of the Society, has retired as head of the department of agricultural economics and rural sociology at Ohio State University.

Barnes F. Lathrop was on leave of absence from the University of Texas during the first semester of 1953–54. During his leave, Professor Lathrop was doing research on certain Louisiana sugar planters during the Civil War. The University of Texas Research Institute has made Professor Lathrop a grant to complete his research on this project.

Samuel Liss has resigned from the Farmers Home Administration and plans to enter private business in Amaganset, Long Island, New York.

Theodore Saloutos of the University of California at Los Angeles discusses "The Grange in the South, 1870–1877," *Journal of Southern History*, 19: 473–487 (November 1953).

O. V. Wells, formerly head of the U. S. Bureau of Agricultural Economics, which was abolished in a recent reorganization of the Department of Agriculture, has been named head of the newly-created Agricultural Marketing Service.

Hugh H. Wooten of the U. S. Department of Agriculture is the author of *Major Uses of Land in the United States*, issued as U. S. Department of Agriculture Technical Bulletin 1082 (100 p., October 1953). In addition to showing the present-day uses of land, Mr. Wooten traces changes in land use from 1880 to the present.

Wilbur H. Glover's book, *Farm and College, The College of Agriculture of the University of Wisconsin*, was given special recognition by the Curators of the State Historical Society of Wisconsin as "the outstanding scholarly book in the field of Wisconsin state and local history in the year 1952–53." The award was presented at the Founders' Day Dinner in January, 1954.

WISCONSIN RECONSIDERS THE FRONTIER

The leading theme of the University of Wisconsin Summer Session will be the history and significance of frontiers. Special courses and seminars will be offered by the departments of history, anthropology and geography. Arrangements have been made for a series of public lectures, some to be delivered by staff members, others by visiting scholars. The following visitors have already accepted invitations to speak at Madison sometime during the summer: Walter P. Webb, University of Texas; Paul W. Gates, Cornell University; A. L. Burt, University of Minnesota; A. Lobanov-Rostovsky, University of Michigan; A. I. Hallowell, University of Pennsylvania; J. Lewis Robinson, University of British Columbia; Silvio Zavala, Colegio de Mexico; Henry Nash Smith, University of California; W. G. B. Carson, Washington University; George W. Hill, Universidad Central de Venezuela.

Further details may be obtained by writing to Professor Clifton Kroeber, History Department, University of Wisconsin, Madison, 6, Wisconsin.

THE AGRICULTURAL HISTORY REVIEW

The first volume of *The Agricultural History Review*, the journal of the newly organized British Agricultural History Society, has been published. H. P. R. Finberg, University College, Leicester, is the editor.

BRAZILIAN REVIEW OF ECONOMIC HISTORY

A new periodical, *Revista de História da Economia Brasileira* has made its appearance in São Paulo, Brazil, under the date of June 1953. The first issue contains a number of articles of interest to agricultural historians, including articles on coffee in Paraába from 1850 to 1860, sugar in Minas Gerais, export taxes in Brazil, and commercial rivalry between the English and North Americans in Brazil during the nineteenth century. The review is edited by a board of well-known economic historians and is directed by Professor Jorge Martins Rodrigues, Viaduto D. Paulina, 80, São Paulo, Brazil.

YEARBOOK OF AGRICULTURAL HISTORY

The Nederlands Agronomisch-Historisch Instituut, Oude Boteringestraat 44, Groningen, has issued the first volume of *Historia Agriculturae* as a yearbook of the Institute. The 194-page volume contains a brief report on the activities of the Institute, a bibliography of books and articles on agricultural history published in 1950, an essay written in 1812 on Dutch agricultural terms, and the replies to an agricultural questionnaire issued by the Netherlands Government in 1800.

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